

STIC Database Tracking Number: 138939

TO: Terra Gibbs

Location: rem/2d10/2c18

Art Unit: 1635

Tuesday, December 07, 2004

Case Serial Number: 09/491063

From: Peggy Ruppel

Location: Biotech-Chem Library

REMSEN 1B65

Phone: 571-272-2557

Peggy.Ruppel@uspto.gov

Search Notes

The results of your sequence search request are attached. Please contact me if you have any questions or comments.

Thank you for using STIC services.



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STIC-Biotech/ChemLib

ノFrom:

Gibbs, Terra

Sent:

Tuesday, November 30, 2004 10:11 AM

To:

STIC-Biotech/ChemLib

Subject:

Sequence search request...

Could you please do a regular search of SEQ ID NO:1 of USSN 09/491063 in all commercial and pending databases? Could you please do a regular search of SEQ ID NO:2 of USSN 09/491063 in all commercial and pending databases?

Terra Cotta Gibbs, Ph.D. Art Unit 1635 Remsen Building 2D10 Mailbox 2C18 571-272-0758

STAFF USE ONLY

Searcher: ______ Searcher Phone: 2-Date Searcher Picked up: _____ Date Completed: _____ Searcher Prep/Rev. Time: ____ Online Time: ____

Type of Search

NA Sequence: #______

AA Sequence : #______

Structure: #______

Bibliographic: ______

Litigation: ______

Patent Family: ______

Other:

Vendors and cost where applicable STN: _______
DIALOG: ______
QUESTEL/ORBIT: ______
LEXIS/NEXIS: ______
SEQUENCE SYSTEM: ______
WWW/Internet:

Other(Specify):_

1101 30 20

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Title:
Perfect score:
Sequence:
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Maximum Match 100%
Listing first 45 summaries
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GenEmbl:*
1: gb_ba:*
2: gb_htg:*
3: gb_in:*
4: gb_om:*
5: gb_ov:*
6: gb_pat:*
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10739.095 Million cell updates/sec
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Copyright (c) 1993 - 2004 Compugen Ltd.
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	No.	Score	Query Match	Query Match Length	DB 14	ID
	N	1047.8	96.7	1086	14	TMWREPPRO
	ω	1047.8	96.7	1162	σ	AR170763
	4	1044.6	96.5	1169	6	AR170765
	ຫ	1043	96.3	1169	0	AR170766
ი	δ	1040.8	96.1	2602	σ	AR170774
	7	1039.8	96.0	1169	თ	AR170764
	œ	1033.8	95.5	1166	σ	AR170771
ი	9	905.6	83.6	2642	14	AF049336
ი	10	856.4	79.1	2632	14	GEABMVA
ņ	11	840.4	77.6	2634	14	AMU51137
ი	12	825.4	76.2	2634	14	AF101476
ი	13	825	76.2	2155	14	TM0563919
ი	14	821.8	75.9	2597	14	AF012300
a	15	817.4	75.5	2635	14	AF226664
ი	16	814.2	75.2	2635	14	AF226665
ი	17	809.8	74.8	2612	14	SGMV2612
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ი	19	773.2	71.4	2615	14	BDMARAL13A

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61.9	62.8	62.8	63.1	63.3			63.8		64.0	64.1	64.3	64.3	64.6	64.7	64.8	64.8	65.0	65.1	65.6	70.0	70.1	70.3	70.7	70.9	71.2
2642	2647	2647	2647	2646	1062	1062	1062	2647	2595	1183	2630	1183	2647	2581	2644	1246	2644	2593	2584	2620	2605	2601	2582	2603	2603
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AY044135	E01003	E00867	MBGBCG	MBGCG1Z	AR170803	AR170801	AR170799	MBGCGA	AY120882	AR170797	MYE344452	AR170796	MBGCOAREPA	SGU77963	AF173555	AR170772	BG0544531	PYVVA	TLCY15034	HTVDANCA	SGMVAVAC	SG0577395	AF039031	SGU77964	SGMVZ603
AY044135 Macroptil	E01003 Vector DNA	E00867 DNA encodin	D00201 Bean golden	M10070 Bean golden	AR170803 Sequence	AR170801 Sequence	AR170799 Sequence	M91604 Bean golden	AY120882 Potato ye	AR170797 Sequence	AJ344452 Macroptil	AR170796 Sequence	L01635 Bean golden	U77963 Sida golden	AF173555 Bean gold	AR170772 Sequence	AJ544531 Bean gold	D00940 Potato yell	Y15034 Potato yell	Y14874 Tomato mosa	X99550 Sida golde	AJ577395 Sida gold	AF039031 Potato y	U77964 Sida golden	YIIO9/ Sida goiden

ALIGNMENTS

rep_origin	CDS	gene		source	FEATURES	PUBMED	MEDLINE	TOTRNAT.	TITLE	AUTHORS	a casasa a c	ORGANISM	SOURCE	KEYWORDS	VERSION	ACCESS TON	DEFINITION	Locus	RESULT 1
/gene="ALL" //gene="ALL" //gene="ALL" //gote="putative" //codon_start=1 //codon_start=1 //product="replicative protein" //product="replicative protein" //product="replicative protein" //protein_id="AAC32414.1" //db_xref="gi:295321" //db_xref=	complement (join(15232601,17))	/noce="A component" complement(join(15232601,17)) /coce="%11"	/organism="iomaco mottle virus-[riorida]" /mol_type="genomic DNA" /db_xref="taxon:223359"	12601	Location/Qualifiers		93107858	ISOLATED From tomatoes in Florida J. Gen. Virol. 73 (Pt. 12). 3225-3229 (1992)	The nucleotide sequence of tomato mottle virus, a new geminivirus	Abouzid, A.M., Polston, J.E. and Hiebert, E.	Viruses; ssDNA viruses; Geminiviridae; Begomovirus.	Tomato mottle virus-[Florida]	Tomato mottle virus-[Florida]		L14460.1 GI:295320	protein (ARI), replicative protein (ALI), transcriptional element (AL2), and AL3 genes, complete cds.	virus-[Florida] complete A co	TMWALR 2601 bp ss-DNA circular VRL 07-MAR-2003	

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                                                          CCAGAGGAGGCCAGCCTGCTAATGATTCATATGCGAAAGCATTAAATGCAGGTTCGG
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complement(1077. .1475)
/gene="AL3"
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/translation="MRSSSPSQPPSIKRAHRQAKKRAIRRRRVDLQCGCSIYFHLGCA
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GHGFTHRGTHHCTSGGEWRVYLGARKSPLFQDTQSRGPTVYQNEGIPRTDTVQPQPEE
SVASPQSLPELPSLDDVDDSFWINLFS"
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/gene="AL2"
complement (1222. .1611)
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yrkprwyrtlattdvaagcegpckvQssegrhdishigkkwcisbvtrgwgithkvgk
recyksvyilekimwdshiklkunthsvmymynrprygtpwblwtymymghdrepy
atvkndlrdryQymhkfygkvtgGQyasneQaivkrfwkvnnhvvynhQeagkyenht
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NNVVRAVRFATNRVYVNHVLENHSIKFKFY"
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325. .1080
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Gilbertson,R.L., Hidayat,S.H., Paplomatas,E.J., Rojas,M.R.,
Hou,Y.M. and Maxwell,D.P.
Pseudorecombination between infectious cloned DNA components
tomato mottle and bean dwarf mosaic geminiviruses
J. Gen. Virol. 74 (Pt 1), 23-31 (1993)
                                                                                                                                                                                                                                                                                  . (81108)
Gilbertson,R.L., Hidayat,S.H., Rojas,M.R. and Maxwell,
Infectious DNA clones of a new geminivirus associated
                                                                                                                                                                                                                                                                                                                                                             Tomato mottle virus
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Tomato mottle virus replicative
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/organism="Tomato mottle virus"
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                                                                            Location/Qualifiers
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                                                    GATAATTATTTCGGGACGGGTGCAGCTGCGCGGGCCAGAGAGACCTGTAAGTATCATCGTC
                                                                                                                             GATAATTATTTCGGGACGGGTGACGCTGCGCCCGCCGGATAGACCTGTAAGTATCATCGTC
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/protein_id="AAA02942.1"
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QNHNIRSNLERIFAKAPEPWVPPFQVSSFTNVPDEMQEWADNYFGTGAAARPERFVSI
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LLGAQKDWQSNCKYGKFVQIKGGIPAIVLCNPGEGASYKEFLDKAENTGLKNWTVKNA
IFITLTAPLYQDSTQAASQETGNQKAQG"
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/function="replication'
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Sequence 1
AR170763
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Stout, J.T., Luu,H.T., Hanson,S.F., Maxwell,D.P.,
Gilbertson,R.L.
Transgenic plants expressing mutant geminivirus A
Patent: US 6291743-A 1 18-SEP-2001;
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                         Unknown
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                                                                    AR170765
Sequence 5 :
AR170765
AR170765.1
1 (bases 1 to 1169)
Stout.J.T., Luu,H.T., Hanson,S.F., N
Gilbertson,R.L.
Transgenic plants expressing mutant
Patent: US 6291743-A 5 18-SEP-2001;
Location/Qualifiers
                                        Unclassified
                                                      Unknown.
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                                                                                                                                                    GCCCCCCTATCAAGAGAGCACACAGGCAAGCCAAGAAACGGGCAATCAGAAGGCGCAG
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6291743.
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              AC1
                          Ahlquist, P.G.
             or C1
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Matches 1059; Conserv
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              CCAGCAATCGTGCTTTGCAATCCTGGTGAGGGTGCCAGCTATAAAGAGTTCTTAGACAAA
                                                            CAAAATCATAACATCCGCTCTAACCTAGAACGAATATTCGCAAAGGCTCCGGAACCGTGG
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nilarity 97.8%;
Conservative
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/mol_type="unassigned
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Pred. No. 7.56
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780 823 523 540 583 600 643 660 703

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TITLE
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AUTHORS
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KEYWORDS
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Matches 1058; Conserv
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Unclassified.
1 (bases 1 to 1169)
1 (bases 1 to 1169)
Stout, J.T., Luu, H.T., Hanson, S.F., Maxwell, D.P., Ahlquist, P.G.
Stout, J.T., Luu, H.T., Hanson, S.F., Maxwell, D.P., Ahlquist, P.G.
Gilbertson, R.L.
Transgenic plants expressing mutant geminivirus AC1 or C1 genes
Transgenic plants expressing mutant geminivirus AC1 or C1 genes
Patent: US 6291743-A 7 18-SEP-2001;
Patent: US 6291743-A 7 18-SEP-2001;
Location/Qualifiers
1. .1169
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Sequence 7
AR170766
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                                                                 GGTTCGGTTCAATCTGCCTTAGCGGTTCTAAGGGAAGAACAACCAAAAGATTTTGTATTA
                                                                                                                   AGATCTGCCAGAGGAGGCCAGCAGTCTGCTAATGATTCATATGCGAAAGCATTAAATGCA
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                                                   AGTTCGGTTCAATCTGCCTTAGCAGTTCTAAGGGAAGAACAACCAAAAGATTTTGTATTA
                                                                                                      AGATCTGCCAGAGGAGGCCAGCAGTCTGCTAATGATTCATATGCGAAAGCGTTAAATGCA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /organism="unknown"
/mol_type="unassigned
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Pred. No. 2.2e-291;
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RESULT 6
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Best Local Similarity
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Sequence 17
AR170774
AR170774.1
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                                                                                                                                                                                          Unclassified.

Unclassified.

(Dases 1 to 2602)

Stout, J.T., Luu, H.T., Hanson, S.F., Maxwell, D.P., Ahlquist, P.G. and Gilbertson, R.L.
                                                                                                                                                                       Transgenic plants expressing mutant Patent: US 6291743-A 17 18-SEP-2001;
                                                                                                                                                                                                                                     Unknown
                                                                                                                                                                                                                                               Unknown
                                GATAATTATTTCGGGACGGGTGCAGCTGCGCGGCCAGAGAGACCTGTAAGTATCATCGTC
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TATCTAAAGAAGAAGCACTTTCCCCAATTACAAAACCTAAATACCCCAGTCAACAAGAAAT
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                                                                           Conservative
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                                                                                                                                                           Location/Qualifiers
                                                                                                                             /organism="unknown"
/mol_type="unassigned
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                                                                                   96.1%;
98.0%;
                                                                                                                                                                                                                                                                                         patent
                                                                         Score 1040.8; DB 6;
Pred. No. 1e-290;
0; Mismatches 22;
                                                                                                                                                                                                                                                                                         2602 bp
US 6291743
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Sequence 3 from par170764
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Query Match
Best Local Similarity 97.5
Matches 1056; Conservative
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Unknown.
Unclassified.
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Stout, J.T., Luu, H.T., Hanson, S.F., M
Gilbertson, R.L.
Transgenic plants expressing mutant
Patent: US 6291743-A 3 18-SEP-2001;
Location/Qualifiers
                                                                                                                          GAGGGTGATTCAAGAACAGGGAAGACGATGTGGGCCCGTGCGTTAGGCCCCACATAACTAT
                                                                                                                                                                                                                                                                                                                                      ATTGATGACATCGCACCGCATTATCTAAAGCTAAAGCACTGGAAAGAATTGCTGGGGGCC
                                                                           CTCAGTGGACACCTAGACTTCAATGGTCGAGTCTTCTCGAATGATGTGCAGTATAACGTC
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                                                       CTCAGTGGACACCTAGACTTCAATGGTCGAGTCTTCTCGAATGATGTGCAGTATAACGTC
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Pred. No. 1.9e-290;
0; Mismatches 27;
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Stout, J.T., Luu, H.T., Hanson, S.F., Maxwell, D.P.,
Gilbertson, R.L.
Transgenic plants expressing mutant geminivirus A
Patent: US 6291743-A 13 18-SEP-2001;
Location/Qualifiers
1. .1166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AR170771
Sequence 13 from
AR170771
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                                                                                                                                                                                                             AAGAAATTCATCAAAATTTTGCAGAGAGACTTCATGAAAATGGGGGAACCTCATCTCCATGTG
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97.6%;
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                                                                Sida golden mosaic virus
Sida golden mosaic virus
Viruses; ssDNA viruses; Geminiviridae; Begomovirus.
1 (bases 1 to 2642)
Abouzid,A.M., Polston,J.E. and Hiebert,E.
Molecular characterization of a geminivirus infecti
santaremensis in Florida
                                                                                                                                                                                          AF049336 DAA
Sida golden mosaic virus coat protein (AVI
transactivator protein (AC2), replication
and AC4 (AC4) genes, complete cds.
AF049336 DAGGEREA
2 (bases 1 to 2642)
Abouzid,A.M., Polston,J.E. and Hiebert,E.
Direct Submission
Submitted (19-FEB-1998) Plant Pathology, University of Florida,
                                                                                                                                                                                AF049336.1
                                                        Unpublished
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956 943 896 883 836 823

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716 703 656 643 596 583 536 523 476 463

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/db_xref="GI:2935543"
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Submitted (26-JUL-1989) Jeske H., Institut f Allgemeine Botanik,
Universitaet Hamburg, Ohnhorst str 18, 2000 Hamburg 52, F R G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Submitted (14-NOV-2003) Jeske H., Biologisches Institut, Pfaffenwaldring 57, D-70550 Stuttgart, GERMANY On Nov 21, 2003 this sequence version replaced gi:59349.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Submitted (29-NOV-1990) revised by [4] 4 (bases 1 to 2632)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Prischmuth, T., Zimmat, G. and Jeske, H.
The nucleotide sequence of abutilon mosaic virus reveals prokaryotic as well as eukaryotic features
Virology 178 (2), 461-468 (1990)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Jeske, H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Viruses; ssDNA viruses; Geminiviridae; 1 (bases 1 to 2632)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Abutilon mosaic virus Abutilon mosaic virus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          circular; coat protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GEABMVA 2632 bp
Abutilon mosaic virus subgenome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Jeske,H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Direct Submission
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                                                                                                                                                                                                                                                                                                                                                                                                      /codon_start=1
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/gene="ORF C1"
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YIDKDGDTAEWGEFQIDGRSARGGQQTANDSYAKALNAGDVQSALNILKEEQPKDYVL
QNHNIRSNLERIFAKAPEPWVPRFPLSSFTAVPEEMQEWADDYFGSGSAARPDRPLSL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 complement (join(1571.
/gene="ORF C1"
                                                                                                                                                                                              /gene="ORF V1"
358. .1113
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                                                                                                                                                                                                                                                             IFITLTAPLYQEGTQAGQEEGH"
                                                                                                                                                                                                                                                                                I VEGDSRTGKTMWARALGPHNYLSGHLDFNGRVYSNEVEYNVI DDVAPHYLKLKHWKE
LLGAQKDWQSNCKYGKPVQI KGGI PAI VLCNPGEGSSYKEYLDKEENTGLRNWTLKNA
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                                                                                                                                                                            gene="ORF V1"
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Best Local
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                                                                     2392
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                                                                                                                                                                                                                       2512
                                                                                                                                                                                                                                                                                               2572
                                                                                                                                                                                                                                                                                                                                                                       2632 CCAAAGAATTTAGAGTACAGGCCAAAAATTATTTCCTCACATATCCCCAGTGCTCTTT
                                                                                                                                                                                                                                                        130
                                                                                                                                                                                                                                                                                                                                                                                                                                              938;
                                                                                                                                                                                                                                                                                                                                                                                                          10 CCAAAGAATTTAGAGTTCAGTCAAAGAACTATTTCCTAACTTATCCCCAGTGCTCTCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                          ATCAMAATTTGCAGAGAGCTTCATGAAAATGGGGAACCTCATCTCCATGTGCTTGTTCAG
                                                                                                                                                                                                                                                                                                                        TCTAAAGAAGAAGCACTTTCCCAATTACAAAACCTAAATACCCCAGTCAACAAGAAATTC
ATCGACAAGGACGAGATACAGCTGAATGGGGAGAATTCCAGATCGACGGCAGATCTGCC
                     ATCGACAAGGACGGAGATACAATCGAATGGGGAGAGTTTCCCAAATCGACGGCAGATCTGCC 369
                                                                                         TCAGCACATTTCCATCCGAATATTCAGGGAGCTAAATCGAGCTCCGACGTCAAATCATAC 309
                                                                                                                                               TTCGAAGGCAAATACCAATGCACGAATAACAGATTCTTCGATCTGGTCTCCCCAACCAGG
                                                                                                                                                                   TTCGAAGGTAAGTACCAATGCACGAATAACAGATTCTTCGACCTGGTCTCCCCCAACCCGG
                                                                                                                                                                                                                     ATCAAGATCTGTAGAGAGCTTCACGAGAATGGGGAGCCTCATCTCCATGTGCTCATACAG
                                                                                                                                                                                                                                                                                               ACTAAAGATGAGGCACTTTCCCAATTACAAAACCTAGAAAACCCCAGTGAACAAGAAGTTC
                                                                       TCAGCACATTTCCATCCAAACATACAGGGAGCTAAATCCAGCTCCGACGTCAAGTCCTAC
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ENALLLYMACTHASNPVYATLKIRIYFYDSLMN"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /replace=""
1606~1607
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/gene="ORF C2"
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complement(1110.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         complement (1258. .1644)
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                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 856.4; DB 14;
Pred. No. 3.7e-237;
0; Mismatches 136;
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JOURNAL
REFERENCE
AUTHORS
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AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 11
AMU51137/c
                                                                                                                                                                                                                                                                                                                                                                                                                                           SOURCE
                                                      FEATURES
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                                          Direct Submission
Submitted (12-MAR-1996) Plant Pathology,
Maile Way, Honolulu, HI 96822, USA
Location/Qualifiers
                                                                                                                                                                                                                                                                             1 (bases 1 to 2634)
Wu,Z.C.Hu.J.S.Polston.J.E., Ullman,D.E. and Hiebert,E.
Complete nucleotide sequence of a non-vector transmiss
                                                                                                                                                                of abutilon mosaic geminivirus
Phytopathology 86 (6), 608-613 (1996)
2 (bases 1 to 2634)
Wu,Z.C.Hu,J.S.Polston,J.E., Ullman,D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          complete cds.
U51137
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Abutilon mosaic virus-HW
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TATCAAGAGAGCACACAGGCAAGCCAAGAAACGGGCAATCAGAAGGCGCAAGGGT 1083
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACAGGTCTCAAGAACTGGACTATCAAGAATGCGATCTTCATCACCCCTCACAGGCCCCCCTC 1029
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTGCTTTGCAATCCTGGTGAGGGTTCCAGCTATAAAGAGTACCTGGACAAAGAGGAAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGGCAATCAAATTGCAAGTACGGTAAGCCAGTTCAAATTAAAGGCGGAATCCCAGCAATC 909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTCGCACCGCACTATCTAAAGCTAAAGCACTGGAAAGAATTGCTGGGGGGCCCAAAAAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CACCTGGACTTCAATGGTCGCGTCTATTCGAACGAAGTGGAGTATAACGTCATTGATGAC 1853
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CACCTAGACTTCAATGGTCGAGTCTTCTCGAATGATGTGCAGTATAACGTCATTGATGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCAAGGACAGGAAGACGATGTGGGCACGTTAGGCCCACATAACTATCTCAGTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCAAGAACAGGGAAGACGATGTGGGCGCGTGCGTTAGGCCCACATAACTATCTCAGTGGA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TATCAAGAAGGCACACAGGCAGGCCAAGAGGGCCCATTAGGCGGCGGAGGAT 1559
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organism="Abutilon mosaic virus-HW"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GI:1657740
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/ AV1, AC3,
                                                                                                                                                                         Ullman, D.E.
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AC2,
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                                                                                                                University of Hawaii,
                                                                                                                                                                         Hiebert
                                                                                                                                                                                                                                                                                         transmissible
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CCAGAGAAATTTAGAGTACAGGCCAAAAATTATTTCCTCACATATCCCCAGTACTCTCTT
                                                                                                                Conservative
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/TREPRITATION OF THE PROTECT OF THE PROTEC
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complement (2229. .2486)
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/gene="AC2"
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YHVQIRFNHNLRRALHLHKAYLNFQVWTTSMKASGSTYLARFTRLVNMYLDQLGVISI
NNVIRAVQFAYDRSYVNYVLENHSIKFKFY"
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/proteIn_id="AAB18171.1"
/db_xref="GI:1657742"
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/db_xref="taxon:222059"
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/db_xref="GI:1657743"
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/strain="Hawaii"
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                                                                                                                                                                                                                                                                                                                                                                                                         gene="AC4"
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                                                                                                                           TATCAAGAGAGACACAGGCAAGCCAAGAAACGGGCAATCAGAAGGCGCAGGGT 1083
                                                                                                                                                                                                              ACAGGTCTCAAGAACTGGACTATCAAGAATGCGATCTTCATCACCCCTCACAGCCCCCCTC
                                                                                                                                                                                                                                                                                              GTGCTTTGCAATCCTGGTGAGGGTGCCAGCTATAAAGAGTTCTTAGACAAAGCAGAAAAT
                                                                                                                                                                                                                                                                                                                                                                                 TGGCAATCAAATTGCAAGTACGGTAAGCCAGTTCAAATTAAAGGCGGAATCCCAGCAATC
                                                                                                                                                                                                                                                                                                                                                                                                                         GTCGCACCGCAGTATCTAAAGCTAAAGCACTGGAAAGAGTTGCTGGGGGTCCCAAAAAGAC
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTTGGGAGTGGTGCCGCCGGCCACACAGACCATTGAGTCTCATAGTCGAAGGTGAT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTCGAAGGCAAATTCCAATGCACGAATTATAGATTCTTCGATCTGGTCTCCCCAACCAGG
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                                                                                                    TATCAAGAAAGCACACAGGCCAAGAGGAGGAGGCAATCAGACGGCGGAGGAT 1561
                                                                                                                                                                               ACAGGTCTCAMAAACTGGACTCGCAMAAATGCGATCTTCATCACCCTCACATCCCCCCTC
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Submitted (26-OCT-1998) Plant Pathology, Davis, One Shields Ave., Davis, CA 95616, Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           crumple geminivirus (in) ANNUAL MEETING OF PHYTOPATHOLOGY, VOL 88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Jiang, H., Hou, Y.-M., Guzman, P. and Gilbertson, R.L. Complete nucleotide sequence of the infectious clone
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Chino del tomate virus-[IC]
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Viruses; ssDNA viruses; Geminiviridae; Begomovirus
1 (bases 1 to 2634)
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                                                                                                                                                                                                              /product="AC1 protein"
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/product="AC1 protein"
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IVEGDSRTGKTWMARALGFHNYLSGHLDFNEKYYSUSVEYNVLDUNGHVIJKLKHWKE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /translation="mpkrdlpwrsiagtskysrnanysprggsgprinkaaewynrpm
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                               /codon_start=1
/product="AC4 portein"
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/translation="MRMGSLISTFSSNSKGSTSARITDSSIWSPQPGQHISIRTYREL
NPAPTSSPTSTRTEIQLSGENSRSTADQLEEVSNLLTTHMPRR"
                                                                                                                                                                                                                                                                                                                                                                                                    SVASPQSLPELPSLDDIDDSFWVDLFS" complement (1416. .2501)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /translation="MDSRTGEFITVPQAENGVYIWEIENPLYFKMYKVEDLFYTRTRV
YHVQIRFNHNLRRALHLHKAYLNFQVWTTSMIASGSTYLARFRHLVNMYLDQLGVISI
NNVIRAVRFATDRSYVSYVLENHSIKFKLY"
                                                                                                                                                                             LLGAQKDWQSNCKYGKPVQIKGGIPAIVLCNPGEGASYKDFLNKEENASLRNWTIKNA
IFITLTSALYQDSAQASQEKGHQEEAD"
                                                                                                                                                                                                                                                                                                                                                                                                                                        /translation="MRSSSPSHPPSIKTAHRQAKKRAIRRRRIDLRCGCSIYFHIGCT
GHGFTHRGIHHCTSGGEWRYYLGDRKSPLFQDVQSGGSTVYENQGLPRSDTVQPQPEE
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/product="AV1
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/db_xref="GI:4336698"
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_xref="taxon:222455"
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                                                                                                       CCAGCAATCGTGCTTTGCAATCCTGGTGAGGGTGCCAGCTATAAAAGAGTTCTTAGACAAA
                                                                                                                                                                CAGAAAGATTGGCAATCAAATTGCAAGTACGGTAAGCCAGTTCAAATTAAAGGCGGAATC
                                                                                                                                                                                                                                                                                                                                                    CAAAATCATAACATCCGCTCTAACCTAGAACGAATATTCGCAAAGGCTCCGGAACCGTGG
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 GCCCCCCTCTATCAAGAGAGCACACAGGCAAGCCAAGAAAACGGGCAATCAGAAGGCGCAG
                                               GCAGAAAATACAGGTCTCAAGAACTGGACTATCAAGAATGCGATCTTCATCACCCTCACA
                                                                                                                                                                                                                                                                                                                              GAAGGTGATTCGAGGACAGGGAAGACGATGTGGGCCTAGGGCCATTAGGCCCCACATAATTAC
                                                                                                                                                                                                                                                                                                                                                                                         GATGATTATTTTGGAAGAGGTTCCGCTGCGCGGCCGGAAAGACCTATTAGTATCATCGTG
                                                                                                                                                                                                                                                                                                                                                                                                                 GATAATTATTTCGGGACGGGTGACGCTGCGCCGCCGGATAGACCTGTAAGTATCATCGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CATAATCATAACATCCGCTCCAACCTAGAGAGAATATTCGCAAAGGCTCCGGAACGGTGG
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                                                                                        CCAGCAATCGTGCTTTGCAATCCTGGTGAGGGTGCCAGCTATAAAGATTTCCTCAACAAA
                                                                                                                                                 CAGAAGGACTGGCAATCCAATTGCAAGTACGGTAAGCCAGTTCAAATTAAAGGAGGGATC
                                                                                                                                                                                                                           ATTGATGACATCGCACCGCATTATCTAAAGCTAAAGCACTGGAAAGAATTGCTGGGGGCC
                                                                                                                                                                                                                                                                     CTCAGTGGACACCTAGACTTCAATGGTCGAGTCTTCTCGAATGATGTGCAGTATAACGTC
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Pred. No. 3.8e-228;
0; Mismatches 161;
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Direct Submission
Submitted (20-MAY-2003) Ramos P.L., P
Submitted v Biotecnol., Ave 31 e/ 158
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AC1 gene; AV1 gene; coat protein;
Tomato mottle Taino virus
Tomato mottle Taino virus
Viruses; ssDNA viruses; Geminiviri
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AJ563919
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bana, 10600, CUBA
/Godon_start=1
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/product="coat protein"
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yinkdgdtlewgefqidgrsarggqqsandsykaklingnvqsamavlkeeqpkdpvkt
yinknirsnlerifakapepwypfplssftnyddemoewadvyfgagsakrpnkpmsi
viegdsrtgkymmaralgphnylsghldpntrysndvqynviddiaphylklkhwke
Llgaqrdwqsnckygkpvqikggipaivlcnpgegasykdflskdentslrdwtikna
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                                                                                                                                                                                                                                                                                                                                                                    complement(1. .1086)
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                                                                                                                             /gene="AV1"
1400. .2155
                                                                                                                                                                                                                                                                                      /codon_start=1
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/isolate="Boyeros"
/specific_host="Solanum
/db_xref="taxon:223358"
                                                                                                                                                                                                                                                                                                                                                                                    /gene="AC1"
                                                                                                             gene="AV1"
                                                                                                                                                                                                                                                                                                                                                        gene="AC1"
                                                                                                                                                                                                                                                                                                                                                                                                                    country="Cuba:Boyeros"
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979 AAGAACTGGACTATCAAGAATGCGATCTTCATCACCCTCACAGCCCCCCTCTATCAAGAG 1038	168 AATCCTGGTGAGGGTGCCAGCTATAAAGACTTCCTCAGCAAAGACGAGAACACATCTCTC 109	919 AATCCTGGTGAGGGTGCCAGCTATAAAAGAGTTCTTAGACAAAGCAGAAAATACAGGTCTC 978	859 AATTGCAAGTACGGTAAGCCAGTTCAAATTAAAGGCGGAATCCCAGCAATCGTGCTTTGC 918	799 CATTATCTAAAGCTAAAGCACTGGAAAGAATTGCTGGGGGCCCAGAAAGATTGGCAATCA 858	739 TTCAATGGTCGAGTCTTCTCGAATGATGACGTGCAGTATAACGTCATTGATGACATCGCACCG 798	679 GGGAAGACGATGTGGGCGCGTGCGTTAGGCCCACATAACTATCTCAGTGGACACCTAGAC 738	468 GGTTCCGCTGCGGCCAAATAGACCCCATGAGTATTGTCATAGAAGGTGATTCAAGGACA 409	TCTTCTTTCACTAACGTTCCTGACGAGATGCAGGAATGGGCGGATAATTATTTCGGGACG	499 TCTAACCTAGAACGATATTCGCAAAGGCTCCGGAACCGTGGGTTCCTCCATTTCAAGTC 558	439 TTAGCGGTTCTAAGGGAAGAACAACCAAAAGATTTTGTATTACAAAATCATAACATCCGC 498	379 CAGCAGTCTGCTAATGATTCATATGCGAAAGCATTAAATGCAGGTTCGGTTCAATCTGCC 438	319 GACGGAGATACAATCGAATGGGGAGATTTCCAAATCGACGCAGATCTGCCAGAGGACGC 378	TICCATICGAATATTCAGGAGGTAAATIGAGGTICGAGGTCAAATCATACATGGACATGACAT	99 AGTACCAATGCACGAATAACAGATTCTTCGACCTGGTCTCCCAACCCGGTCAGCACAT	39 TGCAGAGAGCTTCATGAAAATGGGGAACCTCATCTCCATGTGCTTGTTCAGTTCGAAGGT	.79 GAAGCACTTTCCCAATTACAAAACCTAAATACCCCAGTCAACAAGAAATTCATCAAAATT 138 	19 TTTAGAGTTCAGTCAAAGAACTATTTCCTAACTTATCCCCAGTGCTCTCTATCTA	tches 915; Conservative 0; Mismatches 150; Indels 0; Gaps 0;	ATVKNDLRDRYQVMHRFHTKVTGGQYASNEQALVRRFWKVNNHVVYNHQEAAKYENHT ENALLLYMACTHASNPVYATLKIRIYFYDSILN"
	CDS	gene		CDS	gene		STO			CDS	gene	FEATURES sourc	AUTHORS TITLE JOURNAL	TITLE JOURNAL REFERENCE	ORGANISM REFERENCE AUTHORS	ACCESSION VERSION KEYWORDS SOURCE	RESULT 14 AF012300/c	ο _γ 1	Db
/node="All, kep" /codon_start=1	/gene="rep" complement (13872472)	SVASPQSLPELPSLDDIDDSFWINIFS" 13872472	/procein_id="AJU0966/.1" /db_xref="G1:317789" /translation="MRCSSPSQPPSIKIAHRQGKKRAIRRRRVDLQCGCSIYFHLNCA GHGFTHRGTHHCTSGGEWRVYLGNTKSPLFQDVQSRGLAVHQNQGIPRTNTIQPQPEE	complement (10861475) /codon_start=1 /product="transactivator protein"	YHAQIRFNHNLRRALHLHKAYLNFQVWTTSTTASGSTYLARFRFLVNMYLDQIGVISI NNVIRAVRFATNRAYVNYVLENHSIKFKFY" 1086 1475 /gene="TLAP"	<pre>/product="AL3" /protein_id="AAD09666.1" /protein_id="AAD09666.1" /db_xref="G1.2317788" /translation="MDSRTGELITAHQAENGVYIWEIQNPLYFKMYRVE</pre>	/gene="AL3" /gene="AL3" complement(9411339) /codon start=1	YRKPKI YRMMRTPDVPRGCEGPCKVQSYBQRHDI SHVGKVMCVSDVTRGNGITHRVGK RFCVKSVYILGKI MMDENI ICLKNHTINSVMFMLVRDRR PYGTPMDFGQVFNNYDNBPST ATVEKNDLADRYQVMFRHFMTYKTGGQVASNERDALVRRFMKVNNHVVYNHQBAAKYENHT ENALLLYMACTHASNPVYATLKI RIYFYDSI LN"	/product="coat protein" /protein id="AAD09665.1" /protein id="AAD09665.1" /db_xref="GI:2317787" /translation="MPKRDRTWRSTAGTSKVSRNANYSDRTGSGDTGNKASEWVNRPM		n = ×1	æ	Ramos, P.L. Direct Su Submitted Apdo Post	Rivera-Bust; Taino tomat; Plant Dis. 2 (bases 1	-		AF012300 2597 bp DNA circular VRL	1039 AGCACACAGGCAAGCCAAGAACGGGCAATCAGAAGGCGCAGGGT 1083	

ORIGIN

Query Match
Best Local Sim
Matches 913;

79

1435 1038 1495 978 1555

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Similarity
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AATTGCAAGTACGGTAAGCCAGTTCAAATTAAAGGCGGAATCCCAGCAATCGTGCTTTGC
                                                                                     CATTATCTAAAGCTAAAGCACTGGAAAGAATTGCTGGGGGCCCAGAAAGATTGGCAATCA
                                                                                                                                                                          TTCAATGGTCGAGTCTTCTCGAATGATGTGCAGTATAACGTCATTGATGACATCGCACCG
                                                                                                                                                                                                                        GGGAAGACGATGTGGGCGTGCGTTAGGCCCACATAATTATCTGAGTGGACATTTGGAC
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/protein_id="AAD09668.1"
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HNHNIRSNLERIFAKAPEPMVPPPFPLSSFTNVPDEMQEWADVYFGAGSAARPNRPMSI
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LLGAQRDWQSNCKYGKPVQIKGGIPAIVLCNPGEGASYKDFLSKDENTSLRDWTIKNA
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Plant Dis. 72, 866-869 (1988)
2 (bases 1 to 2635)
3 (bases 1 to 2635)
4 Hrown,J.K., Ostrow,K.M., Idris,A.M. and Stenger,D.C.
Chino del tomate virus: relationships to other begomoviruses ar
Chino del tomate virus: relationships to other begomoviruses ar
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Phytopathology 90, 546-552 (2000) 3 (bases 1 to 2635) Stenger, D.C. and Brown, J.K.
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1 (bases 1 to 2635)
Brown, J.K. and Nelson, M.R.
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Chino del tomate virus-[H8]
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                                                                              344 Keim Hall,
                    complement (971.
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                                                                                                                                                                                                                                                                                                                                    219. .974
                                                                                                                                                                                                                                                                                                                                                                                                                       /mol_type="genomic DNA"
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/db_xref="taxon:222454"
/chromosome="DNA A"
                                                                                                                                                                                                                                                                                                                                                                                                  note="variant H8"
                                                                                                                                                                                                                                                                                                                                                      'gene="AV1"
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AAATCATACATCGACAAGGACGGAGATACAATCGAATGGGGAGATTTCCAAATCGACGGC
                                     CCAACCCGGTCAGCACATTTCCATCCGAACATACAGGGAGCTAAATCCAGCTCCGACGTC
                                                              CCAACCCGGTCAGCACATTTCCCATCCGAATATTCAGGGAGCTAAATCGAGCTCCGACGTC
                                                                                                           CTCATACAATTCGAAGGGAAGTACCAGTGCACGAATAACAGATTCTTCGATCTGGTCTCC
                                                                                                                                              CTTGTTCAGTTCGAAGGTAAGTACCAATGCACGAATAACAGATTCTTCGACCTGGTCTCC
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Complement(1417...2502)
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YHVQIRFNHNLRRALHLHKAYLNFQVWTTSMTASGSTYLARFRHLVIMYLDQLGVISI
NNVIRAVHFATDRSYVNYVLENHSIKFKLY"
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Search completed: December Job time : 4774 secs 4 2004, 15:10:30

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Copyright (c) 1993 - 2004 Compugen Ltd.
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Aat93292 Bean gold
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ALIGNMENTS

RESULT 1
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XX 17-OCT-2003 27-APR-1998 AAT93294; AAT93294 standard; DNA; 1160 BP (revised) (first entry)

Tomato mottle virus AC1 open reading frame.

Geminivirus; TOMOV; AC1 gene; transdominant mutation; transgenic plant; disease resistance; ss; cyclic; circular.

Tomato mottle virus; isolate Florida

23-OCT-1997. WO9739110-A1 44. .1129 /*tag= a Location/Qualifiers

16-APR-1996; 96US-0015517P

15-APR-1997;

97WO-US006300

(SEMI-) SEMINIS VEGETABLE SEEDS INC. (WISC) WISCONSIN ALUMNI RES FOUND.

WPI; 1997-526447/48. P-PSDB; AAW34332.

Stout JT,

Luu HT,

Hanson SF, Maxwell DP,

Ahlquist PG;

Transgenic plants expressing geminivirus AC1 and C1 wild-type and mutant genes - have increased resistance to geminivirus infection e.g. tomato mottle virus, tomato yellow leaf curl virus or bean golden mosaic geminivirus.

Example 3.3; Page 57-58; 132pp; English.

This genomic DNA sequence includes the open reading frame of the wild-

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Query Match
Best Local Similarity
Matches 1061; Conserv
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                                  CTCAGTGGACACCTAGACTTCAATGGTCGAGTCTTCTCGAATGATGTGCAGTATAACGTC
                                                                                   GATAATTATTTCGGGACGGGTGACGCTGCGCCCGCCGGATAGACCTGTAAGTATCATCGTC
                                                                                                                                                                                                                                                                                              GITCCTCCATTTCAAGTCTCTTCTTTCACTAACGTTCCTGACGAGATGCAGGAATGGGCG
                                                                                                                                                                                                                                                                                                                                                                                  CAAAATCATAACATCCGCTCTAACCTAGAACGAATATTCGCAAAGGCTCCCGGAACCGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTTGTTCAGTTCGAAGGTAAGTACCAATGCACGAATAACAGATTCTTCGACCTGGTCTCC
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CTCAGTGGACACCTAGACTTCAATGGTCGAGTCTTCTCGAATGATGTGCAGTATAACGTC
                                                                                                                                                                          GATAATTATTTCGGGACGGGTGCAGCTGCGCGGCCAGAGAGACCTGTAAGTATCATCGTC
                                                                                                                                                                                                                                                                                                                                                           CAAAATCATAACATCCGCTCTAACCTAGAACGAATATTCGCAAAAGGCTCCGGAACCGTGG
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Pred. No. 0;
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This DNA sequence comprises a transdominant lethal mutant, designated TOMOV-ACIDIMI, of the ACI gene of tomato mottle virus virus (TOMOV). It encodes an ACI protein (see AAW34325) that carries a mutation in its NTP-binding domains. The ACI gene (see also AAT93294) must be expressed for efficient replication of the two genomic components, DNA-A and DNA-B, of

genes - have increase mottle virus, tomato

Claim 11; Page 64-65; 132pp; English

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XX AAT9
AC AAT9
XX AAT9
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XX Gemi
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                                                                                                                                                                                                                  Transgenic plants expressing geminivirus AC1 and C1 wild-type and mutant genes - have increased resistance to geminivirus infection e.g. tomato mottle virus, tomato yellow leaf curl virus or bean golden mosaic
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Query Match
Best Local Similarity
Matches 1059; Conserv
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  ATTGATGACATCGCACCGCATTATCTAAAGCTAAAGCACTGGAAAGAATTGCTAGGGGCC
                                                                               CTCAGTGGACACCTAGACTTCAATGGTCGAGTCTTCTCGAATGATGTGCAGTATAACGTC
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CAGAAAGATTGGCAATCAAATTGCAAGTACGGTAAGCCAGTTCAAATTAAAGGCGGAATC

This DNA sequence comprises a transdominant lethal mutant, designated TOMOV-ACIALM23, of the ACI gene of tomato muttle virus virus (TOMOV). It encodes an ACI protein (see AAM34326) that carries 2 mutations in an NTP-binding domain. The ACI gene (see also AAT93294) must be expressed for efficient replication of the two genomic components, DNA-A and DNA-B, of the bipartite TOMOV genome. The invention involves production of transgenic plants containing DNA comprising geminivirus ACI or CI wild-type or mutant sequences that negatively interfere in trans with geminiviral replication during infection. Such transgenic plants are resistant to viral infection. The ACI/CI genes are especially from TOMOV,

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                                                                                                                      Transgenic plants expressing geminivirus AC1 and C1 wild-type and mutant genes - have increased resistance to geminivirus infection e.g. tomato mottle virus, tomato yellow leaf curl virus or bean golden mosaic
                                                                                             Claim 11; Page
                                                                                                                                                         P-PSDB; AAW34326
                                                                                                                                                                                  Stout JT,
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                                                                                                                                                                                                                                                                                                                                     Synthetic.
                                                                                                                                                                                                                                                                                                                                                             Geminivirus; ToMoV-Acidlm23; AC1 gene; transdominant mutation;
transgenic plant; disease resistance; ss; cyclic; circular.
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Best Local Sim
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                                                           CAGAAAGATTGGCAATCAAATTGCAAGTACGGTAAGCCAGTTCAAATTAAAGGCGGAATC
                                                                                                               ATTGATGACATCGCACCGCATTATCTAAAGCTAAAGCACTGGAAAGAATTGCTGGGGGCC
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                                          CAGAAAGATTGGCAATCAAATTGCAAGTACGGTAAGCCAGTTCAAATTAAAGGCGGAATC
                                                                                                 ATTAAATACATCGCACCGCATTATCTAAAGCTAAAGCACTGGAAAGAATTGCTAGGGGCC
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CACCAAAGAAATTTAGAGTTCAGTCAAAGAACTATTTCCTAACTTATCCCCAGTGCTCTC

Query Match Best Local : Matches 1054;

Local Similarity

96.1%; 98.0%;

Pred. No. 0; 0; Mismatches Score 1040.8;

22;

Indels

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Gaps

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Conservative

Sequence

2602

BP; 671 A; 561 C; 586 G; 784

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                        This genomic DNA sequence comprises a full-length A-component clone of tomato mottle virus (TOMOV), a geminivirus that has a bipartite genome comprising DNA-A and DNA-B. It was isolated from TOMOV infected Nicotiana benthamiana and tomato plant DNA by restriction digestion. The DNA-B component (see AAT933310) was also isolated. TOMOV DNA-A contains the ACI gene (see AAT93394) that must be expressed for efficient replication of DNA-A and DNA-B. The invention involves production of transgenic plants containing DNA comprising ACI or CI wild-type or mutant sequences that negatively interfere in trans with geminiviral replication during infection. Such transgenic plants are resistant to viral infection. (Updated on 17-OCT-2003 to standardise OS field)
                                                                                                                                                                                                                                                    Transgenic plants expressing geminivirus AC1 and C1 wild-type and mutant genes - have increased resistance to geminivirus infection e.g. tomato mottle virus, tomato yellow leaf curl virus or bean golden mosaic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Geminivirus; ToMoV; AC1 gene; transdominant disease resistance; ss; cyclic; circular.
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27-APR-1998
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                           TCTATCAAGAGAGCACACAGGCAAGCCAAGAAACGGGGCAATCAGAAGGCGCAAGGGT 1083
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RESULT 5 AAT93282

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AAGAAATTCATCAAAATTTGCAGAGAGCTTCATGAAAATGGGGAACCTCATCTCCATGTG

TGCTCTCTATCTAAAGAAGAAGCACTTTCCCCAATTACAAAACCTAAATACCCCAGTCAAC

TGCTCTTTGTCTAAAGAAGAAGCACTTTCCCCAATTACAAAACCTAAATACCCCCAGTCAAT

163 120 103 60 0

ATGCCCCCACCAAGAAATTTTAGAGTTCAGTCAAAGAACTATTTCCTAACTTATCCCCAG ATGCCCCCACCAAAGAAATTTAGAGTTCAGTCAAAGAACTATTTCCTCACTTATCCACAG

B S

Query Match Best Local Matches 1055;

Similarity

95.9%;

Score 1038.2; Pred. No. 0; 0; Mismatches

DB 2; 28;

Indels Length 1169

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Conservative

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This DNA sequence comprises a transdominant lethal mutant, designated TOMOV-ACIDIM, of the ACI gene of tomato muttle virus virus (TOMOV). It encodes an ACI protein (see AAW34324) that carries mutations in its NTP-binding domains. The ACI gene (see also AAT93294) must be expressed for efficient replication of the two genomic components, DNA-A and DNA-B, of the bipartite TOMOV genome. The invention involves production of transgenic plants containing DNA comprising geminivirus ACI or CI wild-type or mutant sequences that negatively interfere in trans with geminiviral replication during infection. Such transgenic plants are resistant to viral infection. The ACI/CI genes are especially from TOMOV, tomato yellow last curl virus or bean golden mosaic geminivirus (see AAT93282-93) and encode polypeptides (see AAW34324-35) that have mutations in the highly conserved DNA-nicking and/or the NTP-binding
                                                                                                                                                                                                                                                                                                                           Transgenic plants expressing geminivirus AC1 and C1 wild-type and mutant genes - have increased resistance to geminivirus infection e.g. tomato mottle virus, tomato yellow leaf curl virus or bean golden mosaic
Sequence 1169 BP; 363 A; 281 C; 255 G; 270 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                              Claim 11; Page 60-62; 132pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                              Stout JT, Luu HT,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Tomato mottle virus; isolate Florida
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Geminivirus; TOMOV-Acidlm; AC1 gene; transdominant mutation; transgenic plant; disease resistance; ss; cyclic; circular.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                16-APR-1996;
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                                     standard; DNA; 1166 BP
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                                                                                                                                                                                                             CCAGCAATCGTGCTTTGCAATCCTGGTGAGGGTGCCAGCTATAAAGAGTTTCTTAGACAAA
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                                                                                                      GGT 1083
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Best Local 9
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WPI; 1997-526447/48.
                                                                                                                                                                                                                                                                                                                                                                                                              Geminivirus; ToMoV-Ac1dlm23; AC1 gene; transdominant mutation;
                                                                    (SEMI-) SEMINIS VEGETABLE SEEDS INC. (WISC.) WISCONSIN ALUMNI RES FOUND.
                                                                                                                                                                                                                                                                                                                                                                                            transgenic plant; disease resistance;
                                                                                                                                                                                                                                                                                                                                                                                                                                                mottle virus
                                 Luu HT,
                                                                                                                                                                                                                                                                                                                                                          virus;
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                                                                                                                                                            97WO-US006300
                                                                                                                                                                                                                                                                                   Location/Qualifiers
                                   Hanson SF,
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                                   Maxwell DP,
                                                                                                                                                                                                                                                                                                                                                                                          ss; cyclic;
                                   Ahlquist
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Transgenic plants expressing geminivirus AC1 and C1 wild-type and mutant genes - have increased resistance to geminivirus infection e.g. tomato mottle virus, tomato yellow leaf curl virus or bean golden mosaic geminivirus.

Claim 11; Page 72-73; 132pp; English.

This DNA sequence comprises a mutated AC1 gene of tomato mottle virus (TOMOV). It carries an inserted 4-base SaulA site that shifts the AC1 gene translation reading frame resulting in the expression of a truncated AC1 protein (see AAW3427). The AC1 gene (see also AAT93294) must be expressed for efficient replication of the two genomic components, DNA-A and DNA-B, of the bipartite TOMOV genome. The invention involves production of transgenic plants containing DNA comprising geminivirus AC1 or C1 wild-type or mutant sequences that negatively interfere in trans with geminiviral replication during infection. Such transgenic plants are resistant to viral infection. The AC1/C1 genes are especially from TOMOV, tomato yellow leaf curl virus or bean golden mosaic geminivirus (see AAT93282-93) and encode polypeptides (see AAW34324-35) that have mutations in the highly conserved DNA-nicking and/or the NTP-binding domains

Sequence 1166 BP; 361 A; 277 C; 260 G; 268 T; 0 U; 0 Other;

Local Similarity AAGAAATTCATCAAAATTTGCAGAGAGATCATGAAAATGGGGAACCTCATCTCCATGTG ATGCCCCCAACCAAAGAAATTTAGAGTTCAGTCAAAGAACTATTTCCTAACTTATCCCCAG CTTGTTCAGTTCGAAGGAAAGTACCAGTGCACGAATAACAGATTCTTCGACCTGGTCTCC CTTGTTCAGTTCGAAGGTAAGTACCAATGCACGAATAACAGATTCTTCGACCTGGTCTCC TGCTCTTTGTCTAAAGAAGAAGCACTTTCCCAATTACAAAACCTAAATACCCCAGTCAAT TGCTCTCTATCTAAAGAAGAAGCACTTTCCCCAATTACAAAACCTAAATACCCCAGTCAAC ATGCCCCCACCAAAGAATTTAGAGTTCAGTCAAAGAACTATTTCCTCACTTATCCACAG Conservative 95.5%; 97.6%; 0; Score 1033.8; Pred. No. 0; Mismatches DB 2; 22; Indels Length 1166; 4. Gaps 180 163 120 103 240 223

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 Geminivirus;
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27-APR-1998
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                          Tomato mottle virus AC1-AC2-AC3 DNA.
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ToMoV-Acidlm; AC1 gene; transdominant mutation;
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(first entry)
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Transgenic plants expressing geminivirus AC1 and C1 wild-type and mutant genes - have increased resistance to geminivirus infection e.g. tomato motile virus, tomato yellow leaf curl virus or bean golden mosaic
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                                                                                                                                                                                                                                             16-APR-1996;
                                                                                                                                                                                                                                                           15-APR-1997;
                                                                                                                                                                                                                                                                                                                   transgenic plant; disease resistance; ss; cyclic; circular
                                                                                                                                                                                                                        (SEMI-) SEMINIS VEGETABLE SEEDS INC
                                                                                                                                                                                             1997-526447/48
                                                                                                                                                                                                          Luu HT,
                                                                                                                                                                                                                                                                                                     virus; isolate Florida
                                                                                                                                                                                                                                             96US-0015517P
                                                                                                                                                                                                                                                            97WO-US006300
                                                                                                                                                                                                          Hanson SF, Maxwell DP,
                                                                                                                                                                                                                               INC.
                                                                                                                                                                                                          Ahlquist
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This DNA sequence comprises the complete AC2 and AC3 coding sequences and CC the C-terminal two-thirds of the AC1 open reading frame (see also AT93294) of tomate mosaic virus (TOMOV). It was obtained by ligating a BamHI-HindIII fragment of a binary plasmid composed of a dimer of the full-length, infectious TOMOV A-component with BamHI-HindIII-digested pJT8222; inserting a BamHI-HindIII fragment of this construct into pBluescript II KS+, and digesting with BglI and SphI. The AC1 gene must be expressed for efficient replication of the two genomic components, DNA can be appressed for efficient replication of the two genomic components, DNA can be appressed for efficient replication of the two genomic components, DNA can be composed for transgenic plants containing DNA comprising geminivirus AC1 or C1 wild-type or mutant sequences that negatively interfere in transfer with geminiviral replication during infection. Such transgenic plants are resistant to viral infection. The AC1/C1 genes are especially from ToMoV, tomato yellow leaf curl virus or bean golden mosaic geminivirus (see AAT93282-93) and encode polypoptides (see AAW3328-35) that have mutations in the highly conserved DNA-nicking and/or the NTP-binding components of the NTP-binding component

Claim 11; Page

75; 132pp; English

Sequence 1246 BP; 393 A; 264 C; 284 G; 305 T; 0 U; 0 Other;

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                                                                                                                                                              CAAAATCATAACATCCGCTCTAACCTAGAACGAATATTCGCAAAGGCTCCGGAACCGTGG
                                                                                                                                                                                               GGTTCGGTTCAATCTGCCTTAGCGGTTCTAAGGGAAGAACAACCAAAAGATTTTGTATTA
                                                                                                             GTTCCTCCATTTCAAGTCTCTTTCTTTCACTAACGTTCCTGACGAGATGCAGGAATGGGCG
                                                                                                                                                 CAAAATCATAACATCCGCTCTAACCTAGAACGAATATTCGCAAAGGCTCCGGAACCGTGG
 GAGGGTGATTCAAGAACAGGGAAGACGATGTGGGCACGTGCGTTAGGCCCCACATAACTAT
                                                GATAATTATTTCGGGACGGGTGCAGCTGCGCGCCAGAGAGACCTGTAAGTATCATCGTC
                                                                                                 GTTCCTCCATTTCAAGTCTCTTTTCACTAACGTTCCTGACGAGATGCAGGAATGGGCG
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RESULT 8
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                                                                           Transgenic plants expressing geminivirus AC1 and C1 wild-type and mutant genes - have increased resistance to geminivirus infection e.g. tomato mottle virus, tomato yellow leaf curl virus or bean golden mosaic
                                                              geminivirus.
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27-APR-1998
                 Example 5; Page 100-102; 132pp; English
                                                                                                                                                                                      WPI; 1997-526447/48.
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resistance; ss; cyclic; circular.
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                                        TTGAGCGGTCATTTGGACTTTAATTCACGTGTCTATTCCAACGCAGTGGAATACAACGTC
                                                                             CTCAGTGGACACCTAGACTTCAATGGTCGAGTCTTCTCGAATGATGTGCAGTATAACGTC
                                                                                                                          GAAGGTGATTCACGAACCGGAAAGACAATGTGGGCTCGTGCATTAGGACCACATAATTAT
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Score 696.2; DB 2; Pred. No. 1.3e-210; 0; Mismatches 238; 0 Ċ, Indels Length 1183; 0 Other 0 Gaps 0

This genomic DNA sequence includes the open reading frame (ORF) of the wild-type C1 gene of bean golden mosaic virus (BGMV), a geminivirus that has a monopartite genome. The C1 protein (see AAM34338) is required for replication. The wild-type C1 ORF was subjected to Kunkel mutagenesis (see AAT93290-93). The invention involves production of transgenic plants containing DNA comprising C1 or AC1 wild-type or mutant sequences that negatively interfere in trans with geminiviral replication during infection. Such transgenic plants are resistant to viral infection. The AC1/C1 genes are especially from BGMV, tomato mottle virus or tomato yellow leaf curl virus (see AAM33282-93) and encode polypeptides (see AAM34324-35) that have mutations in the highly conserved DNA-nicking domain and/or the NTP-binding domains. (Updated on 17-OCT-2003 to

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ID ARAS4
XX AAAS4
XX PWRC
XX PWRC
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KW Gemi
KW Gemi
KW BGMV
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                    The present sequence is a 35S-rep gene cassette comprising the rep gene of bean golden mosaic virus (BGMV)-GA cloned downstream of the CaMV 35S promoter and an alfalfa mosaic virus (AMV) leader sequence. The sequence was integrated into pBSII-KS+ to produce a rep gene expression vector. pNA-nicking domain mutations may be incorporated into rep gene to produce a genetic construct that acts as a trans-dominant inhibitor of geminiviral replication. When expressed in a plant cell, this inhibitor is able to dramatically reduce replication of geminivirus. Genetic constructs that include sequences containing a portion of the ac3 gene in addition to the trans-dominant inhibitor exhibit increased efficiency and broadened specificity of inhibition of geminiviral replication. Geminiviruses are one of the greatest constraints on production of important crops, including cassava, beans, compeas, peppers, tomatoes and cotton. The effects of the virus can be overcome by using the genetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Geminivirus; DNA-A; geminivirus replication inhibition; ac3 gene; transgenic plant; antiviral; gene therapy; bean golden mosaic vir BGMV; alfalfa mosaic virus; AMV; cauliflower mosaic virus; CaMV;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Genetic construct comprising a mutant geminiviral rep gene, producing a plant resistant to geminiviral infection.
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Cauliflower mosaic virus.
Alfalfa mosaic virus.
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                                                                                                               CAAAAGGACTGGCAATCTAACTGTAAATATGGAAAGCCGGTTCAAATTAAAGGAGGAATA
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77.98;
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Pred. No. 1.6e-210;
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RESULT 10
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Best Local (
                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                            The present sequence is pTrep23deltaE/CX. It contains a mutated geminivirus rep gene sequence. Genetic constructs containing DNA-nicking domain mutants in the rep gene may be used as trans-dominant inhibitors of geminiviral replication. When expressed in a plant cell, these inhibitors are able to dramatically reduce replication of geminivirus. Genetic constructs that include sequences containing a portion of the acl gene in addition to the trans-dominant inhibitor exhibit increased efficiency and broadened specificity of inhibition of geminiviral replication. Geminiviruses are for the greatest constraints on production of important crops, including cassava, beans, cowpeas, peppers, tematoes and cotton. The effects of the virus can be overcome by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Genetic construct comprising a mutant geminiviral rep gene, useful for producing a plant resistant to geminiviral infection.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Geminivirus; DNA-A; geminivirus replication inhibition; transgenic plant; antiviral; gene therapy; ds.
                                                                                                                                                                                                                                                                                                                           Sequence 1894 BP; 604 A; 421 C; 388 G; 481 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Example; Col 19-22; 14pp; English
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                                                                       AAGAAATTCATCAAAATTTGCAGAGAGCTTCATGAAAAATGGGGAAACCTCATCTCCATGTG
                                                                                                         TGCCCTATACCGAAAGAAGATTCTTTCGCAACTTCAGAAGATTCATACAGCCACGAAT
                                                                                                                                          TGCTCTCTATCTAAAGAAGAAGCACTTTCCCAATTACAAAACCTAAATACCCCAGTCAAC
                                                                                                                                                                                                     ATGCCCCCACCAAGAAATTTAGAGTTCAGTCAAAGAACTATTTCCTAACTTATCCCCAG
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                                 AAAAAATTCATCAAAGTCTGTGAGGAACGTCACGAGAATGGTGAACCTCATCTTCATGCG
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                                                                                                                                                                                                                                                                          GCCCCCCTCTATCAAAGCACAACACAGGATTGCCAAACGTAGAGCCATTCGTCGACG
                                                                                                          (first
                                                                     sequence
                                                                                                                                                                                DNA;
                                                                                                         entry)
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Query Match
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Matches 839
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Genetic construct comprising a mutant geminiviral rep gene, useful producing a plant resistant to geminiviral infection.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 2072 BP; 661 A; 467 C; 421 G; 523 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Example; Col 17-20; 14pp; English.
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CAAAATCATAACATCCGCTCTAACCTAGAACGAATATTCGCAAAGGCTCCGGAACCGTGG
                                                     GATTCAATTGAATCTGCCTTGACAATATTGAAGGAAGAACAACCGAAAGATTACGTCCTT
                                                                                        GGTTCGGTTCAATCTGCCTTAGCGGTTCTAAGGGAAGAACAACCAAAAGATTTTGTATTA
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Pred. No. 1.8e-210;
0; Mismatches 238;
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                Stout JT,
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27-APR-1998
                                         (SEMI-) SEMINIS VEGETABLE SEEDS INC. (WISC ) WISCONSIN ALUMNI RES FOUND.
                                                                               16-APR-1996;
                                                                                                      15-APR-1997;
                                                                                                                                                           WO9739110-A1
                                                                                                                                                                                                                                                                Geminivirus; BGMV; C1 gene; transdominant mutation; transgenic plant; disease resistance; ss; cyclic; circular.
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                Luu
                                                                                                                                                                                                                                        mosaic virus; type II isolate
                                                                                                                                                                                                                                                                                                        mosaic geminivirus C1 mutant gene
                                                                                                                                                                                                                                                                                                                                 (revised)
(first entry)
                HT,
                                                                               96US-0015517P
                                                                                                         97WO-US006300
                                                                                                                                                                                  /*tag= a
                                                                                                                                                                                                             Location/Qualifiers
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                Hanson SF,
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                Maxwell DP,
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             Ahlquist
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                                                                                                                          This DNA sequence comprises construct BGAC190 that codes for a control mutant (see AAW34332) of the C1 protein (see AAW34338) of bean golden mosaic virus (BGMV). It was obtained by Kunkel mutagenesis of the wild-type C1 gene (see AAT93314). C1 is required for replication. The invention involves production of transgenic plants containing DNA comprising geminivirus C1 or AC1 wild-type or mutant sequences that negatively interfere in trans with geminiviral replication during infection. Such transgenic plants are resistant to viral infection. The AC1/C1 genes are especially from BGMV, tomato mottle virus or tomato yellow leaf curl virus (see AAW3328-93) and encode polypeptides (see AAW34324-35) that have mutations in the highly conserved DNA-nicking and/or the NTP-binding domains. (Updated on 17-OCT-2003 to standardise (see
                                                                                                                                                                                                                                                                                                                                                                                                                                          Transgenic plants expressing geminivirus AC1 and C1 wild-type and mutant genes - have increased resistance to geminivirus infection e.g. tomato mottle virus, tomato yellow leaf curl virus or bean golden mosaic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 1997-526447/48
P-PSDB; AAW34332.
                                                                                                                                                                                                                                                                                                                                                                                                                                geminivirus.
                                                                            Sequence 1183 BP; 371
                                                                                                                                                                                                                                                                                                                                                                                        13; Page 103-105; 132pp;
                    Similarity
                  64.1%;
                                                                            A,
                                                                              277
Score 694.6; DB
Pred. No. 4.3e-21
0; Mismatches 23
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                  4.3e-210;
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                                                                                                                                      GTTCCTCCATTTCAAGTCTCTTTCACTAACGTTCCTGACGAGATGCAGGAATGGGCG
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                                                                                                     GTTCCTCCATTTCCGTTGTCATCATTCCGCAATGTTCCGGTTGTTATGCAAGAATGGGTT
                                                                                                                                                                                                           CAACATCACAACATCCGTTCTAATCTCGAACGGATCTTCGTCAAAGTGCCGGAACCATGG
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The present sequence is pTrepN, a vector containing a CaMV-35S promoter-driven rep gene derived from bean golden mosaic virus (BGMV)-GA. Sitedirected mutagenesis was used to engineer an NcoI site in the start codo of the rep gene to facilitate cloning of DNA-nicking domain mutants. The

genetic

constructs act as trans-dominant

Genetic construct comprising a mutant geminiviral rep producing a plant resistant to geminiviral infection.

17-18;

14pp;

English.

2000-610861/58

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            24-APR-1998;
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Cauliflower mosaic virus.
Alfalfa mosaic virus.
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Best Local Similarity
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Pred. No. 5.1e-210;
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Query Match Best Local Similarity

63.8**%**; 78.4**%**;

Score 691.2; DB 2; Pred. No. 4.9e-209;

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                                                        This DNA sequence comprises construct BGAC221 that codes for a transdominant lethal mutant (see AAW3433) of the C1 protein (see AAW34338) of bean golden mosaic virus (BGMV). It was obtained by Kunkel mutagenesis of the wild-type C1 gene (see AAT93314). C1 is required for replication. The invention involves production of transgenic plants containing DNA comprising geminivirus C1 or AC1 wild-type or mutant sequences that negatively interfere in trans with geminiviral replication during infection. Such transgenic plants are resistant to viral infection. The AC1/C1 genes are especially from BGMV, tomato mottle virus or tomato yellow leaf curl virus (see AAT93282-93) and encode polypeptides (see AAW34324-35) that have mutations in the highly conserved DNA-nicking and/or the NTP-binding domains. (Updated on 17-OCT-2003 to standardise OS field)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Transgenic plants expressing geminivirus AC1 and C1 wild-type and mutant genes - have increased resistance to geminivirus infection e.g. tomato mottle virus, tomato yellow leaf curl virus or bean golden mosaic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Claim 13; Page 107-109; 132pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Stout JT,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             16-APR-1996;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Transgenic plants expressing geminivirus AC1 and C1 wild-type and mutant genes - have increased resistance to geminivirus infection e.g. tomato mottle virus, tomato yellow leaf curl virus or bean golden mosaic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI; 1997-526447/48.
P-PSDB; AAW34334.
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27-APR-1998
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This DNA sequence comprises construct BGAC228 that codes for a transdominant lethal mutant (see AAW34334) of the C1 protein (see AAW34338) of bean golden mosaic virus (BGMV). It was obtained by Kunkel mutagenesis of the wild-type C1 gene (see AAT93314). C1 is required for replication. The invention involves production of transgenic plants containing DNA comprising geminivirus C1 or AC1 wild-type or mutant sequences that negatively interfere in trans with geminiviral replication during infection. Such transgenic plants are resistant to viral infection. The AC1/C1 genes are especially from BGMV, tomato mottle virus or tomato yellow leaf curl virus (see AAT93282-93) and encode polypeptides (see AAW34324-35) that have mutations in the highly conserved DNA-nicking and/or the NTP-binding domains. (Updated on 17-OCT-2003 to standardise OS field)

Sequence 1062 BP; 338 A; 247 C; 218 G; 259 T; 0 U; 0 Other;

Length 1062;

Query Match

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                     AAGAAATTCATCAAAATTTGCAGAGAGCTTCATGAAAATGGGGAACCTCATCTCCATGTG
                                                                       TGCTCTCTATCTAAAGAAGAAGCACTTTCCCAATTACAAAAACCTAAATACCCCAGTCAAC
                                                                                                                        ATGCCCCCAAAGAAATTTAGAGTTCAGTCAAAGAACTATTTCCTAACTTATCCCCAG
AAAAAATTCATCAAAGTCTGTGAGGAACGTCACGAGAATGGTGAACCTCATCTTCATGCG
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                                                                                                                                               Conservative
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Pred. No. 4.9e-209;
0; Mismatches 228;
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960	901 CCAGCAATCGTGCTTTGCAATCCTGGTGAGGGTGCCAGCTATAAAGAGTTCTTAGACAAA 	
900	841 CAGAAAGATTGGCAATCAAATTGCAAGTACGGTAAGCCAGTTCAAATTAAAGGCGGAATC	
840 840	781 ATTGATGACATCGCACCGCATTATCTAAAGCTAAAGCACTGGAAAGAATTGCTGGGGGCCC	
780 780	721 CTCAGTGGACACCTAGACTTCAATGGTCGAGTCTTCTCGAATGATGTGCAGTATAACGTC	
720 720	661 GAGGGTGATTCAAGAACAGGGAAGACGATGTGGGCGCGTGCGT	
660	601 GATAATTATTTCGGGACGGGTGACGCTGCGCCGGATAGACCTGTAAGTATCATCGTC	
600	541 GTTCCTCCATTTCAAGTCTCTTTCTTTCACTAACGTTCCTGACGAGATGCAGGAATGGGCG	
540 540	481 CAAAATCATAACATCCGCTCTAACCTAGAACGAATATTCGCAAAGGCTCCGGAACCGTGG	
480 480	421 GGTTCGGTTCAATCTGCCTTAGCGGTTCTAAGGGAAGAACAACCAAAAGATTTTGTATTA	
420 420	361 AGATCTGCCAGAGGAGGCCAGCAGTCTGCTAATGATTCATATGCGAAAGCATTAAATGCA	
360 360	301 AAATCATACATCGACAAGGACGGAGATACAATCGAATGGGGAGATTTCCAAATCGACGGC	
300	241 CCAACCCGGTCAGCACATTTCCATCCGAATATTCAGGGAGCTAAATCGAGGTCCGACGTC	
240	181 CTTGTTCAGTTCGAAGGTAAGTACCAATGCACGAATAACAGATTCTTCGACCTGGTCTCC	

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Copyright (c) 1993 - 2004 Compugen Ltd.
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US-08-838-151A-43
US-09-065-999-8
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ALIGNMENTS

Expressing Geminivirus w & Katz 4700
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; IOCATION: 44..1127
; PUBLICATION: MFORMATION:
; AUTHORS: Gilbertson, RL
; AUTHORS: Hidayat, SH
; AUTHORS: Paplomatas, EJ
AUTHORS: Paplomatas, EJ
AUTHORS: Rojas, MR
; AUTHORS: HOU, YM
; AUTHORS: HOU, YM
AUTHORS: Maxwell, DP
TITLE: Pseudorecombination between the infectious
; TITLE: cloned DNA components of tomato mottle and bea
TITLE: dwarf mosaic geminiviruses.
; VOLUME: 74
; PAGES: 23-31
; DATE: 1993
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            CTCAGTGGACACCTAGACTTCAATGGTCGAGTCTTCTCGAATGATGATGTGCAGTATAACGTC
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TYPE: nucleic acid STRANDEDNESS: single TOPOLOGY: circular MOLECULE TYPE: DNA (genomic) HYPOTHETICAL: NO ANTI-SENSE: NO ORIGINAL SOURCE: ORGANISM: Tomato Mottle Gemini Virus STRAIN: Florida	APPLICATION NUMBER: US/08/838,151A FILING DATE: CLASSIFICATION: 800 ATTORNEY/AGENT INFORMATION: NAME: Mueller, Lisa V REGISTRATION NUMBER: 38,978 REFERENCE/DOCKET NUMBER: SVS3801P0260 TELECOMMUNICATION INFORMATION: TELEPHONE: 312-616-5400 TELEPAX: 312-616-5400 INFORMATION FOR SEQ ID NO: 5: SEQUENCE CHARACTERISTICS: LENGTH: 1169 base pairs	Appropriate Plaza, Suite 4700 ago inois i.s.A. ABLE FORM: Floppy disk IBM PC compatible PC-DOS/MS-DOS PATENTIN PC-DOS/MS-DOS PATENTIN Release #1.0, Version #1 CATION DATA:	2 398-151A-5 398-151A-	1081 GGT 1083 	1004 GCÁGAAAÁTACAGGTCTAÁAGAACTGGACTGTCAAGAATGCGATCTTCATCACCCTCACA 1063 1021 GCCCCCCTCTATCAAGAGAGACACAGGCAAGCCAAGAAACGGGCAATCAGAAGGCGCAG 1080	901 CCAGCAATCGTGCTTTGCAATCCTGGTGAGGGTGCCAGCTATAAAGAGTTCTTAGACAAA 960	781 ATTGATGACATCGCACCGCATTATCTAAAGCTAAAGCACTGGAAAGAATTGCTGGGGGCC 840

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             CCAGCAATCGTGCTTTGCAATCCTGGTGAGGGTGCCAGCTATAAAGAGTTCTTAGACAAA 960
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US-08-838-151A-7
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                                                                                                                                   US-08-838-151A-7
                                                                Query Match
Best Local Similarity
Matches 1058; Conserv
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                                                                                                                                                                                                                                                                                                                                              TELEPHONE: 312-616-5400
TELEPAX: 312-616-5460
INFORMATION FOR SEQ ID NO: 7:
SEQUENCE CHARACTERISTICS:
LENGTH: 1169 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GENERAL INFORMATION:
APPLICANT: Stout,
APPLICANT: Luu, H
                                                                                                                                                                                                                                                                                                                                                                                                                               CLASSIFICATION: 800
ATTORNEY/AGENT INFORMATION:
NAME: Mueller, Lisa V
REGISTRATION NUMBER: 38,978
REFERENCE/DOCKET NUMBER: SVS3
TELECOMMUNICATION: INFORMATION:
                                                                                                                                                                                                                               MOLECULE TYPE: DNI
HYPOTHETICAL: NO
ANTI-SENSE: NO
ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Hanson, Steve
TITLE OF INVENTION: Transgenic Plants Expressing Geminivirus
TITLE OF INVENTION: Genes
NUMBER OF SEQUENCES: 63
CORRESPONDENCE ADDRESS:
ANDRESCER: Dresler Bockey Milnamow & Katz
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOFTWARE: PatentIn Release #1.0, Version CURRENT APPLICATION DATA: APPLICATION NUMBER: US/08/838,151A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: FC-DOS/MS-DOS
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                  FEATURE:
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                                                                                                                                               NAME/KEY:
LOCATION:
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                                                                                                                                                                                                 STRAIN: Florida
                                                                                                                                                                                                                                                                                                                TYPE: nucleic acid
STRANDEDNESS: sing
                                                                                                                                                                                                                 ORGANISM:
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                   ATGCCCCCACCAAGAAATTTAGAGTTCAGTCAAAGAACTATTTCCTAACTTATCCCCAG
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 ATGCCCCCACCAAAGAATTTAGAGTTCAGTCAAAGAACTATTTCCTCACTTATCCACAG
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Two Prudential Plaza, Suite 4700
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Maxwell, Douglas
Ahlquist, Paul
                                                                 Conservative
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Luu, Hang T
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                                                                               96.38;
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                                                                Score 1043; I
Pred. No. 0;
0; Mismatches
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                                                                                                                                           GCAGAAAATACAGGTCTCAAGAACTGGACTATCAAGAATGCGATCTTCATCACCCTCACA
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GGT 1083
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SEQUENCE CHARACTERISTICS:
LENGTH: 2602 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
TOPOLOGY: circular
MOLECULE TYPE: DNA (genomic
HYPOTHETICAL: NO
ORIGINAL SOURCE:
ORGANISM: Tomato Mottle G
STRAIN: Florida
US-08-838-151A-17
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                                                                                                                                                                                                                                                                                                                                                       Matches 1054; Conservative
                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: Stout, John T
APPLICANT: Luu, Hang T
APPLICANT: Maxwell, Douglas
APPLICANT: Ahlquist, Paul
APPLICANT: Hanson, Steve
TITLE OF INVENTION: Transgenic P:
TITLE OF INVENTION: Genes
NUMBER OF SEQUENCES: 63
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELECOMMUNICATION INFORMATION:
TELEPHONE: 312-616-5400
TELEPAX: 312-616-5460
INFORMATION FOR SEQ ID NO: 17:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GENERAL INFORMATION: APPLICANT: Stout,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM FC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER: US/08/838,151A FILING DATE: CLASSIFICATION: 800 ATTORNEY/AGENT INFORMATION: NAME: Mueller, Lisa V REGISTRATION NUMBER: 38,978 REFERENCE/DOCKET NUMBER: SVS3801PO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STREET: Two Pruc
CITY: Chicago
STATE: Illinois
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2362
                                                                  2422
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                GGTCAGCACTTTCCATCCGAATATTCAGGGAGCTAAATCGAGCTCCGACGTCAAATCAT
                                                                                                                                                                 TCATCAAAATTTGCAGAGAGCTTCATGAAAATGGGGGAACCTCATCTCCATGTGCTTGTTC
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GGTCAGCACATTTCCATCCGAATATTCAGGGAGCTAAATCGAGCTCCGACGTCAAATCGT
                                                                  AGTTCGAAGGAAAGTACCAGTGCACGAATAACAGATTCTTCGACCTGGTCTCCCCAACCC
                                                                                       AGTTCGAAGGTAAGTACCAATGCACGAATAACAGATTCTTCGACCTGGTCTCCCCAACCC
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98.0%;
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                                                                                                                                                                                                                                                                                                                                                                        Score 1040.8;
Pred. No. 0;
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RESULT 5
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                                                                                                  GENERAL INFORMATION:

APPLICANT: Stout, John T

APPLICANT: Luu, Hang T

APPLICANT: Maxwell, Douglas

APPLICANT: Malquist, Paul

APPLICANT: Ahlquist, Paul

APPLICANT: Hanson, Steve

TITLE OF INVENTION: Transgenic Plants Expressing

TITLE OF INVENTION: Genes

NUMBER OF SEQUENCES: 63
CORRESPONDENCE ADDRESS:
ADDRESSEE: Dressler, Rockey, Milnamow & Katz
STREET: Two Prudential Plaza, Suite 4700
CITY: Chicago
STATE: Illinois
COUNTRY: U.S.A.
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LOCATION: 44..1127
PUBLICATION INFORMATION:
AUTHORS: Gilbertson, RL et al.
AUTHORS: Gibertson, RL et al.
TITLE: Pseudorecombination between the infectious
TITLE: cloned DNA components of tomato mottle and beautitte.
TITLE: dwarf mosaic geminivirus.
JOURNAL: Journal of General Virology
VOLUME: 74
PAGES: 23-31
DATE: 1993
DATE: 1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match 96.0%;
Best Local Similarity 97.5%;
Matches 1056; Conservative
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INFORMATION FOR SEQ ID NO: 3:
SEQUENCE CHARACTERISTICS:
LENGTH: 1169 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CLASSIFICATION: 800
ATTORNEY/AGENT INFORMATION:
NAME: Mueller, Lisa V
REGISTRATION NUMBER: 38,978
REFERENCE/DOCKET NUMBER: SV83
TELECOMMUNICATION INFORMATION:
TELEPHONE: 312-616-5400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: DAMPET POS/MS-DOS
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/838,151A
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HYPOTHETICAL:
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STRANDEDNESS: single
TOPOLOGY: circular
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AGATCTGCCAGAGGAGGCCAGCAGTCTGCTAATGATTCATATGCGAAAGCATTAAATGCA
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RESULT 6
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                                                                                                                                                                                                                           GENERAL INFORMATION:
APPLICANT: Stout, John T
APPLICANT: Luu, Hang T
APPLICANT: Maxwell, Douglas
APPLICANT: Maxwell, Douglas
APPLICANT: Hanson, Steve
TITLE OF INVENTION: Transgenic Plants Expressing Geminivirus
NUMBER OF SEQUENCES: 63
CITY: Chicago
STATE: Illinois
COUNTRY: U.S.A.
ZIP: 60601
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                   CORRESPONDENCE ADDRESS:
ADDRESSEE: Dressler, Rockey, Milnamow & Katz
STREET: Two Prudential Plaza, Suite 4700
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TELEPAX: 312-616-5460
INFORMATION FOR SEQ ID NO: 13:
SEQUENCE CHARACTERISTICS:
LENGTH: 1166 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORIGINAL SOURCE:
ORGANISM: Tomato Mottle Geminivirus
INDIVIDUAL ISOLATE: Florida
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/838,151A
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TELECOMMUNICATION INFORMATION:
TELEPHONE: 312-616-5400
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NAME: Mueller, Lisa V
REGISTRATION
REGISTR
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LOCATION:
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STRANDEDNESS: single
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CLASSIFICATION: 800
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  GTGGGTTCCTCCATTTCAAGTCTCTTTCACTAACGTTCCTGACGAGATGCAGGAATG
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0; Mismatches
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RESULT 7
US-08-838-151A-15
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GENERAL INFORMATION:
                                                                                                                                                                                                                                                         STREET: Two Prudential Plaza, Suite 4700
CITY: Chicago
STATE: Illinois
COUNTRY: U.S.A.
ZIP: 60601
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPARIABLE
COMPUTER: IBM PC COMPARIABLE
OPERATING SYSTEM: PC_DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICAT
APPLICATION NUMBER: US/08/838
FILING DATE:
CLASSIFICATION: 800
ATTORNEY/AGENT INFORMATION:
NAME: Mueller, Lisa V
REGISTRATION NUMBER: 38,978
REFERENCE/DOCKET NUMBER: SVS3
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Stout, John T
APPLICANT: Luu, Hang T
APPLICANT: Maxwell, Douglas
APPLICANT: Ahlquist, Paul
APPLICANT: Hanson, Steve
TITLE OF INVENTION: Transgenic Plants Expressing Geminivirus
TITLE OF INVENTION: Genes
NUMBER OF SEQUENCES: 63
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ADDRESSEE: Dressler, Rockey, Milnamow & Katz
STREET: Two Prudential Plaza, Suite 4700
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AUTHORS: Paplomatas, EJ
AUTHORS: Rojas, MR
AUTHORS: Rojas, MR
AUTHORS: Hou, YM
AUTHORS: Maxwell, DP
TITLE: Pseudorecombination between the infectious
TITLE: cloned DNA components of tomato mottle and bea
TITLE: dwarf mosaic geminiviruses.
JOURNAL: Journal of General Virology
VOLUME: 74
PAGES: 23-31
DATE: 1993
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Best Local Similarity
Matches 710; Conserv
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STRAIN: Florium
PUBLICATION INFORMATION:
AUTHORS: Gilbertson, RI
AUTHORS: Hidayat, SH
AUTHORS: Paplomatas, E
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TELEPAX: 312-616-5460
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 1246 base pair
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RESULT 8
US-08-838-151A-43
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Patent No. 6291743
                                                                                                                                                                                                                                                                                                                                                   TELEPHONE: 312-616-5400
TELEPAX: 312-616-5460
INFORMATION FOR SEQ ID NO: 4
SEQUENCE CHARACTERISTICS:
LENGTH: 1183 base pairs
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                                                                                                                                                                                                                                                                   TYPE: nucleic acid strandeness: single TOPOLOGY: circular MOLECULE TYPE: DNA (geno HYPOTHETICAL: NO
                                                                      LOCATION:
PUBLICATION:
AUTHORS:
AUTHORS:
                                                                                                                                                                                                                             HYPOTHETICAL: NO ANTI-SENSE: NO ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0,
CURRENT APPLICATION DATA;
                                                                                                                                          FEATURE:
NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: Luu, Hang T
APPLICANT: Maxwell, Douglas
APPLICANT: Ahlquist, Paul
APPLICANT: Hanson, Steve
TITLE OF INVENTION: Transgenic Plants
TITLE OF INVENTION: Genes
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APPLICANT:
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TELECOMMUNICATION INFORMATION:
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                  AUTHORS:
AUTHORS:
AUTHORS:
                                                                                                                                                                         ORGANISM: Bean Golden Mosaic Geminivirus
STRAIN: Type II Isolates
INDIVIDUAL ISOLATE: Guatemala
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NAME: Mueller, Lisa V REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FILING DATE:
CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER:
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   AUTHORS:
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                                                 Faria, JC
Gilbertson, RL
Hanson, SF
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Two Prudential Plaza, Suite 4700
Morales, FJ
Ahlquist, P
Loniello, AO
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Luu, Hang T
                                                                                                          INFORMATION:
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Best Local Similarity
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PAGES: 321-3
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TITLE: B
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   CAGAAAGATTGGCAATCAAATTGCAAGTACGGTAAGCCAGTTCAAATTAAAGGCGGAATC
                                                                      ATTGATGACATCGCACCGCATTATCTAAAGCTAAAGCACTGGAAAGAATTGCTGGGGGCC
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                                    ATTGATGACATAAGCCCCCAATTATTTGAAGTTAAAGCACTGGAAAGAACTAATTGGGGCA
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Bean Golden Mosaic Geminivirus Type II
Bean Golden From the Dominican Republic and
Isolates from the Dominican Republic and
Guatemala: Nucleotide Sequences, Infectious
Pseudorecombinants, and Phylogenetic Relationships
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Pred. No. 1.3e-218;
0; Mismatches 238;
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                                                                                                                                                                                                                                                                                                             TELEFAX: 608-251-9166
INFORMATION FOR SEQ ID NO: 5:
SEQUENCE CHARACTERISTICS:
LENGTH: 1651 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                   Query Match
Best Local Similarity
Matches 839; Conserv
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Patent No. 6118048
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NAME: Seay, Nicholas J.
REGISTRATION NUMBER: 27,386
REFERENCE/DOCKET NUMBER: 960296.94754
TELECOMMUNICATION INFORMATION:
TELEPHONE: 608-251-5000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SOFTWARE: PatentIn Release #1.0, CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
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TITLE OF INVENTION: TRANS-DOMINANT INHIBITION OF GEMINIVIRAL
TITLE OF INVENTION: DNA REPLICATION BY GEMINIVIRUS REP GENE
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APPLICANT: Maxwell, Douglas F
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                                                                                                                                                                                                                                                                                                                                                                                             TELEPHONE: 608-251-9166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COUNTRY: US
ZIP: 53701-2113
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                                                                                       TGCTCTCTATCTAAAGAAGAAGCACTTTCCCCAATTACAAAAACCTAAATACCCCCAGTCAAC
                                                                                                                                     ATGCCACCACCTCAAAGATTTÄGAGTTCÄGTCGÄÄAAAACTATTTCCTCÄCTTÄTCCTCGT 528
                                                                                                                                                       ATGCCCCCACCAAAGAAATTTAGAGTTCAGTCAAAGAACTATTTCCTAACTTATCCCCAG
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AAAAAATTCATCAAAGTCTGTGAGGAACGTCACGAGAATGGTGAACCTCATCTTCATGCG
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One South Pinckney Street
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                                                                                                                                                                                                   Score 696.2; DB 3;
Pred. No. 1.6e-218;
0; Mismatches 238;
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            Sequence 8, Application US/09065999
Patent No. 6118048
GENERAL INFORMATION:
APPLICANT: Hanson, Stephen F.
APPLICANT: Maxwell, Douglas P.
TITLE OF INVENTION: TRANS-DOMINANT INHIBITION OF GEMINIVIRAL
TITLE OF INVENTION: DNA REPLICATION BY GEMINIVIRUS REP GENE 1
NUMBER OF SEQUENCES: 8
CORRESPONDENCE ADDRESS:
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Best Local Similarity
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INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
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NAME: Seay, Nicholas J.
REGISTRATION NUMBER: 27,386
REFERENCE/DOCKET NUMBER: 9602
TELECOMMUNICATION INFORMATION:
TELEPHONE: 608-251-5000
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TYPE: nucleic acid
STRANDEDNESS: single
TOPOLOGY: linear
MOLECULE TYPE: DNA (genom:
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MEDIUM TYPE: Floppy disk
COMPUTER: IEM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
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STREET: Madison
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COUNTRY: US
ZIP: 53701-2113
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                                                     CAACATCACAACATCCGTTCTAATCTCGAACGGATCTTCGTCAAAGTGCCGGAACCATGG
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Pred. No. 1.7e-218;
0; Mismatches 238;
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Patent No. 6118048
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                        ZIP: 53701-2113
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: IBM PC COMPUTER:
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PATENTIA Release #1.0, V.
CURRENT APPLICATION DATA:
                                                                                              ATTORNEY/AGENT INFORMATION:
NAME: Seay, Nicholas J.
NAME: Seay, Nicholas J.
REGISTRATION NUMBER: 27,386
REFERENCE/DOCKET NUMBER: 9602
TELEPLOWNUNICATION INFORMATION:
TELEPLOE: 608-251-5000
TELEPLAX: 608-251-9166
                                                                                 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Hanson, Stephen F.

APPLICANT: Maxwell, Douglas P.

TITLE OF INVENTION: TRANS-DOMINANT INHIBITION OF GEMINIVIRAL

TITLE OF INVENTION: DNA REPLICATION BY GEMINIVIRUS REP GENE MUTANTS
                                                          SEQUENCE CHARACTERISTICS:
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ADDRESSEE: Quarles &
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STRANDEDNESS:
                  TYPE: nucleic acid
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                                                                                                                                             CAGAAAGATTGGCAATCAAATTGCAAGTACGGTAAGCCAGTTCAAATTAAAGGCCGGAATC 900
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                                      CCATCAATCGTGTTGCAATCCAGGTGAGGGTTCCAGTTATAAAGACTTCCTCGACAAA 1428
                                                             CCAGCAATCGTGCTTTGCAATCCTGGTGAGGGTGCCAGCTATAAAGAGTTCTTAGACAAA 960
                                                                                                            CAAAAGGACTGGCAATCTAACTGTAAATATGGAAAGCCGGTTCAAATTAAAGGAGGAATA
                                                                                                                                                                                   ATTGATGACATAAGCCCCAATTATTTGAAGTTAAAGCACTGGAAAGAACTAATTGGGGCA 1308
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US-08-838-151A-45
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NAME: Mueller, Lisa V
REGISTRATION NUMBER: 38,978
REFERENCE/DOCKET NUMBER: SVS3801P0260
TELECOMMUNICATION INFORMATION:
TELEPAN: 312-616-5400
TELEPAX: 312-616-5400
INFORMATION FOR SEQ ID NO: 45:
SEQUENCE CHARACTERISTICS:
LENGTH: 1183 base pairs
                                                                                                                                                                                                                             US-08-838-151A-45
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                                                                                                                                                  Matches
                                                                                                                                                                  Query Match
Best Local Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Stout, John T
APPLICANT: Luu, Hang T
APPLICANT: Maxwell, Douglas
APPLICANT: Ahlquist, Paul
APPLICANT: Hanson, Steve
TITLE OF INVENTION: Transgeni
TITLE OF INVENTION: Genes
                                                                                                                                                                                                                                                                                                                                                                                                                             LENGTH: 1183 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
TOPOLOGY: circular
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OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/838,151A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                    FEATURE:
                                                                                                                                                                                                                                                                                                                                                             ANTI-SENSE: NO ORIGINAL SOURCE:
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HYPOTHETICAL:
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CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                             NAME/KEY: CDS
LOCATION: 1...
                                                                                                                                                                                                                                                                                                  ORGANISM: Bean Golden Mosaic Geminivirus
STRAIN: Type II
INDIVIDUAL ISOLATE: Guatemala
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CLASSIFICATION: 800
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                                 TGCTCTCTATCTAAAGAAGAAGCACTTTCCCAATTACAAAACCTAAATACCCCAGTCAAC 120
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Two Prudential Plaza, Suite 4700
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                                                                                                                                                                  64.1%;
77.8%;
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                                                                                                                                                Score 694.6; DB 3;
Pred. No. 4.3e-218;
0; Mismatches 239;
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RESULT 13
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Sequence 6, Application US/09065999
Patent No. 6118048
GENERAL INFORMATION:
APPLICANT: Maxwell, Douglas P.
APPLICANT: Maxwell, Douglas P.
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; TOPOLOGY: 1;; MOLECULE TYPE: US-09-065-999-6
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COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: IBM PC compatible
COMPUTER: PATENTIN PC-DOS/MS-DOS
OPERATING SYSTEM: PC-DOS/MS-DOS
SOPTWARE: PATENTIN Release #1.0, Ve-
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/065,999
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATTORNEY/AGENT INFORMATION:

NAME: Seay, Nicholas J.

REGISTRATION UNMBER: 27,386

REFERENCE/DOCKET NUMBER: 9602

TELECOMMUNICATION INFORMATION:

TELEPHONE: 608-251-500

TELEPHONE: 608-251-506
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE CHARACTERISTICS:
LENGTH: 1651 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
TOPOLOGY: linear
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TITLE OF INVENTION: DN
NUMBER OF SEQUENCES: 8
CORRESPONDENCE ADDRESS:
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STREET: On
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CLASSIFICATION:
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STATE: WI
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                                                                                   GGTTCGGTTCAATCTGCCTTAGCGGTTCTAAGGGAAGAACAACCAAAAGATTTTGTATTA
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                                                          GATTCAATTGAATCTGCCTTGACAATATTGAAGGAAGAACAACCGAAAGATTACGTCCTT
                                                                                                                                       AGATCTGCAAGAGGAGGTCAGCAGTCTGCCAACGACTCATATGCAAAGGCATTAAACGCA
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E: Quarles & Brady
One South Pinckney
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Pred. No. 5.3e-218;
0; Mismatches 239;
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RESULT 14
US-08-838-151A-48
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APPLICANT: Stout, John T

APPLICANT: Luu, Hang T

APPLICANT: Maxwell, Douglas

APPLICANT: Ahlquist, Paul

APPLICANT: Ahlquist, Paul

APPLICANT: Hanson, Steve

TITLE OF INVENTION: Transgenic Plants Expressing Geminivirus

TITLE OF INVENTION: Genes

NUMBER OF SEQUENCES: 63

CORRESPONDENCE ADDRESS:
 CLASSIFICATION: 800
ATTORNEY/AGENT INFORMATION:
NAME: Mueller, Lisa V
REGISTRATION NUMBER: 38,978
REFERENCE/DOCKET NUMBER: SYS3
TELECOMMUNICATION INFORMATION:
                                                                                                                                                  COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: ISM PC Compatible
COMPUTER: DM PC Compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                     STREET: Two Prude
CITY: Chicago
STATE: Illinois
COUNTRY: U.S.A.
                                                                                                                    FILING DATE:
                                                                                                                                                                                                                                                                                                                                          ADDRESSEE: Dressler, Rockey, Milnamow & Katz STREET: Two Prudential Plaza, Suite 4700
                                                                                                                                    APPLICATION NUMBER:
                                                                                                                                                                                                                                                                       ZIP: 60601
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                       SVS3801P0260
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Best Local Similarity
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SEQUENCE CHARACTERISTICS:
LENGTH: 1062 base pair
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ANTI-SENSE:
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LOCATION:
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STRAIN: Type II
INDIVIDUAL ISOLATE: Guatemala
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                                         AGAGGTGATTCACGAACCGGAAAGACAATGTGGGCTCGTGCATTAGGACCACATAATTAT
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                                                               GATAATTATTTCGGGACGGGTGACGCTGCGCCGCCGGATAGACCTGTAAGTATCATCGTC
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Pred. No. 5.4e-217;
0; Mismatches 228;
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RESULT 15
US-08-838-151A-51
                                                                                                                                                                  NAME: Mueller, Lisa V

NAME: Mueller, Lisa V

REGISTRATION NUMBER: 38,978

REFERENCE/DOCKET NUMBER: SVS3801P0260

TELECOMMUNICATION INFORMATION:
TELEPHONE: 312-616-5400
TELEFAX: 312-616-5460
INFORMATION FOR SEQ ID NO: 51:
SEQUENCE CHARACTERISTICS:
LENGTH: 1062 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 51, Application US/08838151A Patent No. 6291743
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APPLICANT: Stout, John T
APPLICANT: Luw, Hang T
APPLICANT: Maxwell, Douglas
APPLICANT: Maxwell, Douglas
APPLICANT: Hanson, Steve
TITLE OF INVENTION: Transgenic Plants Expressing Geminivirus
NUMBER OF SEQUENCES: 63
                                                               TOPOLOGY: circular MOLECULE TYPE: DNA (gr HYPOTHETICAL: NO ANTI-SENSE: NO
                                                                                                                                                                                                                                                                                                                                                                                   SOFTWARE: PatentIn Release #1.0, V. CURRENT APPLICATION DATA: APPLICATION NUMBER: US/08/838,151A
                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                  CLASSIFICATION: 800
ATTORNEY/AGENT INFORMATION:
                                                  ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CORRESPONDENCE ADDRESS:
ORGANISM: Bean Gold STRAIN: Type II INDIVIDUAL ISOLATE:
                                                                                                                                      TYPE: nucleic acid
STRANDEDNESS: single
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COUNTRY:
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STREET: Two Prudential Plaza, Suite 4700
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Illinois
TRY: U.S.A.
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                                             CCAGCAATCGTGCTTTGCAATCCTGGTGAGGGTGCCAGCTATAAAGAGTTCTTAGACAAA
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Pred. No. 5.4e-217;
0; Mismatches 228;
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Search Job tim	B	γo	Фb	Ş
Search completed: December 4, 2004, 16:17:42 Job time : 120 secs	1021 GCCCC	1021 GCCCC	961 GAAGA	961 GCAGA
ecember 4,	CCTCTATCAA	CCTCTATCAAC	AAACCGAGCTT	AAATACAGGTO
2004, 1	GCACAACA	AGAGCACA	TACACAAC	TCAAGAAC
6:17:42	1021 GCCCCCTCTATCAAAGCACACACAGGATTGCCAA 1056	1021 GCCCCCCTCTATCAAGAGAGCACACAGGCAAGCCAA 1056	961 GAAGAAAACCGAGCTTTACACAACTGGGACTATTCATAATGCGATCTTCGTCACCCCCACA 102	961 GCAGAAAATACAGGTCTCAAGAACTGGACTATCAAGAATGCGATCTTCATCACCCCTCACA 102
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Minimum DB seq length: 0
Maximum DB seq length: 200000000
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Perfect score:
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Maximum Match 100%
Listing first 45 summaries
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Gapop 10.0 , Gapext 1.0
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3694831 seqs, 2747406616 residues
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1: /cgn2_6/ptodata/1/pubpna/USO7_PUBCOMB.seq:*
2: /cgn2_6/ptodata/1/pubpna/USO6_NEW_PUB.seq:*
3: /cgn2_6/ptodata/1/pubpna/USO6_NEW_PUB.seq:*
3: /cgn2_6/ptodata/1/pubpna/USO6_PUBCOMB.seq:*
3: /cgn2_6/ptodata/1/pubpna/USO6_PUBCOMB.seq:*
3: /cgn2_6/ptodata/1/pubpna/USO8_NEW_PUB.seq:*
3: /cgn2_6/ptodata/1/pubpna/USO8_PUBCOMB.seq:*
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Sco	יודוס	Length	8	ID	¦ £
!	1047.8	96.7	1162	۵,	US-08-838-151A-1	Seguence
	1044.6	96.5	1169	8	US-08-838-151A-5	Sequence
(J)		96.3		8	US-08-838-151A-7	Sequence
a		96.1		8	US-08-838-151A-17	Sequence
		96.0		œ	US-08-838-151A-3	Sequence
	1033.8	95.5	1166	œ	US-08-838-151A-13	Sequence
7		64.8		œ	US-08-838-151A-15	Sequence
_		64.3		œ	US-08-838-151A-43	Sequence
	694.6	64.1	1183	œ	US-08-838-151A-45	Sequence
ב		63.8		œ	US-08-838-151A-48	Sequence
	691	63.8	1062	8	US-08-838-151A-51	Sequence
۳.		63.7		œ	US-08-838-151A-54	Sequence

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US-08-838-151A-60	7	-633-850-	US-10-633-850-110	838-151A-	838-151A-	838-151A-2	51A-	-633-850-	10-633-850-5		10-633-850-	-10-633-850-7	-633-	-10-633-850-	-10-633-850-	-10-633-850-	-10-633-850-5	-633-850-	-10-633-850-	-10-633-850-7	-10-633-	-10-633-850-6	-10-633-850-	-10-633-850-9	-10-633-850-	US-10-633-850-81	-10-633-850-9	US-10-633-850-91	US-10-633-850-63	-10-633-850-	-10-633-850-8	-633-850-7
60,	59, Appl	111, Ap	e 11	29,	26,	Sequence 23, Appl	19, 1	69,	e 55,	Sequence 53, Appl	e 51,	e 75,	e 73,	71,	e 67,		e 57,	e 89,	87,	77,	65,	61,	97,	e 95,	e 85,	Œ	e 93,	e 91,	e 63,	•	æ	е 79,

ALIGNMENTS

FILING DATE: CLASSIFICATION: 800 CLASSIFICATION: 800 CAMPACITY INFORMATION: NAME: Mueller, Lisa V REGISTRATION NUMBER: 38,978 REFERENCE/DOCKET NUMBER: SVS3801P0260 TELECOMMUNICATION INFORMATION: TELEPHONE: 312-616-5400	0.2993772	Luu, Hang T Maxwell, Douglas Ahiquist, Paul Hanson, Steve NVENTION: Transgenic Plants NVENTION: Genes SEQUENCES: 63 ENCE ADDRESS: Two Prudential Plaza, Suite	RESULT 1 US-08-838-151A-1 (S-08-838-151A-1) ; Sequence 1, Application US/08838151A ; Publication No. US20010011379A1 ; GENERAL INFORMATION: - APPLICANT. STOUT John T
60	rsion #1.30	Expressing Geminivirus Ow & Katz 4700	

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Best Local :
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PUBLICATION: 44.....

PUBLICATION INFORMATION:
AUTHORS: Gilbertson, RL
AUTHORS: Hidayat, SH
AUTHORS: Hidayat, SH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TELEFAX: 312-616-5460
INFORMATION FOR SEQ ID NO: 1
SEQUENCE CHARACTERISTICS:
LENGTH: 1162 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM: Tomato Mottle Gemini Virus
INDIVIDUAL ISOLATE: Florida
FEATURE:
NAME/KEY: CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MOLECULE TYPE: DI
HYPOTHETICAL: NO
ANTI-SENSE: NO
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE: dwar
JOURNAL: Jo
VOLUME: 74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TYPE: nucleic acid
STRANDEDNESS: sing
TOPOLOGY: circular
                                                                                                                                         421
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
GTTCCTCCATTTCAAGTCTCTTCTTTCACTAACGTTCCTGACGAGATGCAGGAATGGGCG
                                                     CAAAATCATAACATCCGCTCTAACCTAGAACGAATATTCGCAAAGGCTCCGGAACCGTGG
                                                                                                                              GGTTCGGTTCAATCTGCCTTAGCGGTTCTAAGGGGAAGAACAACCAAAAGATTTTGTATTA
                                                                                                                                                                            AGATCTGCCAGAGGAGGCCAGCAGTCTGCTAATGATTCATATGCGAAAGCGTTAAATGCA
                                                                                                                                                                                               AGATCTGCCAGAGGAGGCCAGCAGTCTGCTAATGATTCATATGCGAAAGCATTAAATGCA
                                                                                                                                                                                                                                                                       AAATCATACATCGACAAGGACGGAGATACAATCGAATGGGGAGATTTTCCAAATCGACGGC
                                                                                                                                                                                                                                                                                                                                              CCAACCCGGTCAGCACATTTCCATCCGAATATTCAGGGGAGCTAAATCGAGCTCCGACGTC
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S: Maxwell, DP
Pseudorecombination between the infectious
Cloned DNA components of tomato mottle and bean
dwarf mosaic geniniviruses.
L: Jour. General Virol.
                                                                                                      AGTTCGGTTCAATCTGCCTTAGCAGTTCTAAGGGAAGAACAACCAAAAGATTTTGTATTA
                                                                                                                                                                                                                                               ANATCGTACATCGACAAGGACGGAGATACAATCGAATGGGGAGATTTCCAGATCGACGGC
                                                                                                                                                                                                                                                                                                                                                                                         CTTGTTCAGTTCGAAGGAAAGTACCAGTGCACGAATAACAGATTCTTCGACCTGGTCTCC
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Rojas, MR
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98.0%;
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RESULT 2
US-08-838-151A-5
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                                                                                                                                                                                                                                                                                                APPLICANT: Stout, John T
APPLICANT: Luu, Hang T
APPLICANT: Maxwell, Douglas
APPLICANT: Ahlquist, Paul
APPLICANT: Hanson, Steve
TITLE OF INVENTION: Transgenic Pl
TITLE OF INVENTION: Genes
NUMBER OF SEQUENCES: 63
CORRESPONDENCE ADDRESS:
ADDRESSEE: Dressler, Rockey, Mi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GENERAL INFORMATION:
APPLICATION NUMBER: US/08/838,151A FILING DATE: CLASSIFICATION: 800 ATTORNEY/AGENT INFORMATION: NAME: Mueller, Lisa V REGISTRATION NUMBER: 38,978 REFERENCE/DOCKET NUMBER: SVS3801F0260
                                                                                                                  COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: PC COMPOSITION
OF SOFTWARE: PATENTIN Release #1.0,
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                   STREET: Two Pruc
CITY: Chicago
STATE: Illinois
                                                                                                                                                                                                                      ZIP: 60601
                                                                                                                                                                                                                                     COUNTRY: U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1064
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Two Prudential Plaza, Suite 4700
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Best Local Similarity
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INFORMATION FOR SEQ ID NO: 5:
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HYPOTHETICAL: NO
ANTI-SENSE: NO
ORIGINAL SOURCE:
ORGANISM: Tomato Mottle Gemini Virus
STRAIN: Florida
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LOCATION:
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TYPE: nucleic acid
STRANDEDNESS: single
TOPOLOGY: circular
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CTCAGTGGACACCTAGACTTCAATGGTCGAGTCTTCTCGAATGATGTGCAGTATAACGTC
                               GAGGGTGATTCAAGAACAGGGCACACGATGTGGGCCACGTGCGTTAGGCCCACATAACTAT
                                                     GATAATTATTTCGGGACGGGTGCAGCTGCGCGGCCAGAGAGACCTGTAAGTATCATCGTC
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                                                                                                                   ATTORNEY/AGENT INFORMATION:
NAME: Mueller, Lisa V
REGISTRATION NUMBER: 38,978
REFERENCE/DOCKET NUMBER: SVS3801P0260
TELECOMMUNICATION INFORMATION:
TELEPHONE: 312-616-5400
TELEFAX: 312-616-5400
INFORMATION FOR SEQ ID NO: 7:
                                                                                                                                                                                                                                                                                              COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Ve
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/838,151A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Luu, Hang T
APPLICANT: Maxwell, Douglas
APPLICANT: Ahlquist, Paul
APPLICANT: Hanson, Steve
TITLE OF INVENTION: Transgenic Plants Expressing
TITLE OF INVENTION: Genes
NUMBER OF SEQUENCES: 63
                                                                SEQUENCE CHARACTERISTICS:
LENGTH: 1169 base pairs
TYPE: nucleic acid
MOLECULE TYPE:
HYPOTHETICAL:
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ADDRESSEE: Dressler, Rockey, Milnamow & Katz
STREET: Two Prudential Plaza, Suite 4700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT:
                                  TOPOLOGY:
                                               STRANDEDNESS: single
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CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                         CITY: Chicago
STATE: Illinois
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Best Local Similarity 97.7
Matches 1058; Conservative
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STRAIN: Florida
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                                                       CAGAAAGATTGGCAATCAAATTGCAAGTACGGTAAGCCAGTTCAAATTAAAGGCGGAATC
                                                                                                      ATTGATGACATCGCACCGCATTATCTAAAAGCTAAAAGCACTGGAAAAGAATTGCTGGGGGCC
                                                                                                                                                                  CTCAGTGGACACCTAGACTTCAATGGTCGAGTCTTCTCGAATGATGTGCAGTATAACGTC
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US-08-838-151A-17
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                                                                                                                                       TELEFAX: 312-616-7460
INFORMATION FOR SEQ ID NO: 17:
SEQUENCE CHARACTERISTICS:
LENGTH: 2602 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
TOPOLOGY: circular
MOLECULE TYPE: DNA (genomic)
HYPOTHETICAL: NO
ORIGINAL SOURCE:
ORGANISM: Fomato Mottle Gemin
STRAIN: Florida
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 17, Application US/08838151A Publication No. US20010011379A1 GENERAL INFORMATION:
                                                              Best Local Similarity Matches 1054; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Stout, John T
APPLICANT: Luu, Hang T
APPLICANT: Maxwell, Douglas
APPLICANT: Aldquist, Paul
APPLICANT: Hanson, Steve
TITLE OF INVENTION: Transgenic Plants Expressing Geminivirus
TITLE OF INVENTION: Genes
NUMBER OF SEQUENCES: 63
CORRESPONDENCE ADDRESS:
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STATE: Illinois
                                                                                                                                                                                                                                                                                                                                                      ATTORNEY/AGENT INFORMATION:
NAME: MUELLET, LISA V
REGISTRATION NUMBER: 38,978
REFERENCE/DOCKET NUMBER: SV.
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/838,151A
                                                                                                                                                                                                                                                                                                                                                                                                                                                            FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                           CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COUNTRY: U.S.A. ZIP: 60601
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Two Prudential Plaza, Suite 4700
                                                              96.1%;
ilarity 98.0%;
Conservative
                                                                                                                                                               Tomato Mottle Geminivirus
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                                                           Score 1040.8; DB 8
Pred. No. 5.5e-311;
0; Mismatches 22;
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RESULT 5
US-08-838-151A-3
; Sequence 3, Application US/08838151A
; Publication No. US20010011379A1
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; JOURNAL: Journ
; VOLUME: 74
; PAGES: 23-31
; DATE: 1993
US-08-838-151A-3
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ATTORNEY/AGERT INFORMATION:
NAME: Mueller, Lisa V
REGISTRATION UNHER: 38,978
REFERENCE/DOCKET NUMBER: SVS3:
TELECOMMUNICATION INFORMATION:
TELEPHONE: 312-616-5460
TELEFAX: 312-616-5460
INFORMATION FOR SEQ ID NO: 3:
SEQUENCE CHARACTERISTICS:
LENGTH: 1169 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
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APPLICANT: Stout, John T
APPLICANT: Luu, Hang T
APPLICANT: Maxwell, Douglas
APPLICANT: Marwell, Douglas
APPLICANT: Hanson, Steve
TITLE OF INVENTION: Transgenic Pl
TITLE OF INVENTION: Genes
NUMBER OF SEQUENCES: 63
CORRESPONDENCE ADDRESS:
ADDRESSES: Dressler, Rockey, Mi
                                                                                                                                                                                                                               Query Match
Best Local Similarity 97.9
Matches 1056; Conservative
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ORIGINAL SOURCE:
ORGANISM: Toma
                                                                                                                                                                                                                                                                                                                                                                                     NAME/KEY: CDS
LOCATION: 44..1127
PUBLICATION INFORMATION:
AUTHORS: Gilbertson, RL et al.
AUTHORS: Gelbertson, RL et al.
TITLE: Pseudorecombination between the infectious
TITLE: cloned DNA components of tomato mottle and
TITLE: dwarf mosaic geminivirus.
JOURNAL: Journal of General Virology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version
CURRENT APPLICATION DATA:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER:
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                      AAGAAATTCATCAAAATTTGCAGAGAGCTTCATGAAAATGGGGAAACCTCATCTCCATGTG 180
                                                                         TGCTCTTTGTCTAAAGAAGCACCTTTCCCAATTACAAAACCTAAATACCCCAGTCAAT
AAGAAATTCATCAAAATTTGCAGAGAGCTTCATGAAAATGGGGAACCTCATCTCCATGTG
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Two Prudential Plaza, Suite 4700
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RESULT 6
US-08-838-151A-13
; Sequence 13, Application US/08838151A
; Publication No. US20010011379A1
; GENERAL INFORMATION:
; APPLICANT: Stout, John T
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Best Local Similarity 97.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                    Matches 1061;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE CHARACTERISTICS:
LENGTH: 1166 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
TOPOLOGY: circular
MOLECULE TYPE: DNA (genomic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TELEFAX: 312-616-5460 INFORMATION FOR SEQ ID NO: 13:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REGISTRATION NUMBER: 38,978
REFERENCE/DOCKST NUMBER: 5V.
TELECOMMUNICATION INFORMATION:
TELEPHONE: 312,616-5400
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FILING DATE:
FILING DATE:
CLASSIFICATION: 800
ATTORNEY/AGENT INFORMATION:
NAME: Mueller, Lies V
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: Maxwell, Douglas
APPLICANT: Ahiquist, Paul
APPLICANT: Hanson, Steve
TITLE OF INVENTION: Transgenic
TITLE OF INVENTION: Genes
NUMBER OF SEQUENCES: 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURE:
NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOFTWARE: PatentIn Release #1.0, Version CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IEM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
OPERATING SYSTEM: PC-DOS/MS-DOS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ADDRESSEE: Dressler, Rockey, Milnamow & STREET: Two Prudential Plaza, Suite 4700
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AAATCGTACATCGACAAGGACGGAGATACAATCGAATGGGGAGATTTCCAGATCGACGGC
                                                                    CCAACCCGGTCAGCACATTTCCATCCGAATATTCAGGGAGCTAAATCGAGCTCCGACGTC
                                                                                                                                        CTTGTTCAGTTCGAAGGAAAGTACCAGTGCACGAATAACAGATTCTTCGACCTGGTCTCC
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; Sequence 15, Application US/08838151A
; Publication No. US20010011379A1
; GENERAL INFORMATION:
APPLICANT: Stout, John T
APPLICANT: Lnu, Hang T
APPLICANT: Maxwell, Douglas
APPLICANT: Ahlquist, Paul
APPLICANT: Hanson, Steve
TITLE OF INVENTION: Transgenic Plants Expressing Gen
TITLE OF INVENTION: Genes
NUMBER OF SEQUENCES: 63
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US-08-838-151A-15
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                                                                            CORRESPONDENCE ADDRESS:
STREET: Two Prude
CITY: Chicago
STATE: Illinois
COUNTRY: U.S.A.
                                            ADDRESSEE: Dressler, Rockey, Milnamow & STREET: Two Prudential Plaza, Suite 4700
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ATTORNEY/AGENT INFORMATION:
NAME: MUGALLEY, LISA V
REGISTRATION NUMBER: 38,978
REFERENCE/DOCKET NUMBER: SVS3;
TELECOMMUNICATION INFORMATION:
TELEFAX: 312-616-5400
TELEFAX: 312-616-5460
INFORMATION FOR SEQ ID NO: 15:
SEQUENCE CHARACTERISTICS:
LENGTH: 1246 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match 64.8
Best Local Similarity 98.2
Matches 710; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM: Tomato Mottle (
STAIN: Florida
PUBLICATION INFORMATION:
AUTHORS: Gilbertson, RL
AUTHORS: Hidayat, SH
AUTHORS: Paplomatas, EJ
AUTHORS: Paplomatas, EJ
AUTHORS: Rojas, MR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TOPOLOGY: circular
MOLECULE TYPE: DNA (genomic)
HYPOTHETICAL: NO
ANTI-SENSE: NO
ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JOURNAL: Jo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AUTHORS: Hou, YM
AUTHORS: Maxwell, DP
TITLE: Pseudorecombination between the infectious
TITLE: cloned DNA components of tomato mottle and
TITLE: dwarf mosaic geminiviruses.
JOURNAL: Journal of General Virology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PAGES: 23-31
DATE: 1993
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STRANDEDNESS: single
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                                    661
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                    GATAATTATTTCGGGACGGGTGCAGCTGCGCGCCCAGAGAGCCTGTAAGTATCATCGTC
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: Luu, Hang T
APPLICANT: Luu, Hang T
APPLICANT: Maxwell, Douglas
APPLICANT: Malquist, Paul
APPLICANT: Hanson, Steve
TITLE OF INVENTION: Transgenic Pl
TITLE OF INVENTION: Genes
TITLE OF SPOUENCES: 63
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Tublication NU.

GENERAL INFORMATION:
GENERAL TOPOLYCLANT: Stout, John T
Tublication Nu.
Tubl
                                                                                                                                                                                 TELEFAX: 312-616-5460 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                               ZIP: 60601
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PATENTIN Release #1.0, Version
CURRENT APPLICATION DATA:
                                                                                                                            SEQUENCE CHARACTERISTICS:
LENGTH: 1183 base pairs
                                                                                                                                                                                                      TELECOMMUNICATION INFORMATION:
TELEPHONE: 312-616-5400
TELEFAX: 312-616-5460
                                                                                                                                                                                                                                                                                ATTORNEY/AGENT INFORMATION:
NAME: Mueller, Lisa V
REGISTRATION NUMBER: 38,
REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NUMBER OF SEQUENCES: 63
CORRESPONDENCE ADDRESS:
ADDRESSEE: Dressler, Rockey, Milnamow & Katz
ADDRESSEE: Two Prudential Plaza, Suite 4700
                          TOPOLOGY: ci
       IYPOTHETICAL:
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                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: FILING DATE: CLASSIFICATION: 800
                                                                          TYPE: nucleic acid
STRANDEDNESS: single
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Best Local Similarity
Matches 839; Conserv
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ORIGINAL SOURCE:
ORGANISM: Bean Golden Mosaic Geminivirus
STRAIN: Type II Isolates
INDIVIDUAL ISOLATE: Guatemala
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NAME/KEY: CDS
LOCATION: 1..1059
PUBLICATION INFORMATION:
AUTHORS: Faria, JC
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ISSUE: 3
PAGES: 321-
DATE: 1994
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AUTHORS: Ahlquist, P
AUTHORS: Loniello, AO
AUTHORS: Maxwell, D
TITLE: Bean Golden Mosaic Geminivirus Type
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GATAATTATTTCGGGACGGGTGACGCTGCGCCGGATAGACCTGTAAGTATCATCGTC
                                                                                                         GTTCCTCCATTTCAAGTCTCTTTCTTTCACTAACGTTCCTGACGAGATGCAGGAATGGGCG
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                                                                               GTTCCTCCATTTCCGTTGTCATCATTCATCAATGTTCCGGTTGTTATGCAAGAATGGGTT
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Guatemala: Nucleotide Sequences, Infectious
Pseudorecombinants, and Phylogenetic Relationships
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Hanson, SF
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Pred. No. 2e-204;
0; Mismatches 238;
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660 600 600 540 480 480 420 420 360

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US-08-838-151A-45
IRLEPAX: 312-616-5460
INFORMATION FOR SEQ ID NO: 45
SEQUENCE CHARACTERISTICS:
LENGTH: 1183 base pairs
TYPB: nucleic acid
STRANDEDNESS: single
TOPOLOGY: circular
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 45, Application US/08838151A Publication No. US20010011379A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                    COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IEM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0,
CURRENT APPLICATION DATA:
                                                                                                                        NAME: Mueller, Lisa V
REGISTRATION NUMBER: 38,978
REFERENCE/DOCKET NUMBER: SV
TELECOMMUNICATION INFORMATION:
TELEPHONE: 312-616-5400
                                                                                                                                                                                                                FILING DATE:
CLASSIFICATION: 800
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Stout, John T
APPLICANT: Luu, Hang T
APPLICANT: Maxwell, Douglas
APPLICANT: Maxwell, Douglas
APPLICANT: Hanson, Steve
TITLE OF INVENTION: Transgenic Plants Expressing Geminivirus
TITLE OF INVENTION: Genes
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CITY: C
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Two Prudential Plaza, Suite 4700
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ANTI-SENSE: NO
ORIGINAL SOURCE:
ORGANISM: Bean Golden Mosaic
STRAIN: Type II
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LOCATION:
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Local Similarity 77.8%;
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 841 CAGAAAGATTGGCAATCAAATTGCAAGTACGGTAAGCCAGTTCAAATTAAAGGCGGAATC
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                                                            ATTGATGACATCGCACCGCATTATCTAAAGCTAAAGCACTGGAAAGAATTGCTGGGGGCC
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                                       ATTGATGACATAAGCCCCAATTATTTGAAGTTAAAGCACTGGAAAGAACTAATTGGGGCA
                                                                                                            TTGAGCGGTCATTTGGACTTTAATTCACGTGTCTATTCCAACGCAGTGGAATACAACGTC
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Pred. No. 6.2e-204;
0; Mismatches 239;
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Query Match 63.8%; Score 691.2; DB 8; Length 1062; Best Local Similarity 78.4%; Pred. No. 6.6e-203; Matches 828; Conservative 0; Mismatches 228; Indels 0; Gaps 0;	œ	; INIVIUOAL ISOLATE: GUATEMAIA ; FEATURE: · NAME/KEV. CDC	NAL SOURCE: ANISM: Bean Golde AIN: Type II	; HYPOTHETICAL: NO ; ANTI-SENSE: NO	rcula	; LENGTH: 1062 base pairs ; TYPE: nucleic acid	INFORMATION FOR SEQ ID NO: 48: SEQUENCE CHARACTERISTICS:	10	; NAME: MUELLET, Lisa V; NAME: MUELLET, Lisa V; REGISTRATION NUMBER: 38,978; REFERENCE/DOCKET NUMBER: SVS3801P0260	; FILING DATE: ; CLASSIFICATION: 800	ATA: US/08/838,151A	; COMPULEX: LEW PC COMPACTALE; ; OPERATING SYSTEM: PC-DOS/MS-DOS ; SOFTWARE: Patentin Release #1.0, Version #1.30	; COMPUTER READABLE FORM: ; MEDIUM TYPE: Floppy disk	STATE: Illinois COUNTRY: U.S.A. ZIP: 60601	nt ex	; AFFLICANI: MAINOII, SLEVE ; TITLE OF INVENTION: Transgenic Plants Expressing Geminivirus ; TITLE OF INVENTION: Genes ; NUMBER OF SEQUENCES: 63	Luu, Ha Maxwell Ahlquis		US-08-838-151A-48 ; Sequence 48, Application US/08838151A ; Publication No. US20010011379A1		QY 1021 GCCCCCCTTATCAAGAGAGAGCACACAGGCAAGAAAACGGGCAATCAGAAGGCG 1077	Qy 961 GCAGAAAATACAGGTCTCAAGAACTGGACTATCAAGAATGCGATCTTCATGACCCTCACA 1020	901 CCATCAATCGTGTGTGCAATCCAGGTGAGGGTTCCAGTTATAAAGACTTCCTCGACAAA	
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1021 GCCCCCTCTATCAAAGCACAACACAGGATTGCCAA 1056 1021 GCCCCCCTCTATCAAAGCACAACACAGGATTGCCAA 1056		961 GCAGAAAATACAGGTCTCAAGAACTGGACTATCAAGAATGCGATCTTCATCACCCCTCACA 1020	901 CCAGCAATCGTGCTTTGCAATCCTGGTGAGGGTGCCAGCTATAAAGAGTTCTTAGACAAA 960		841 CAGAAAGATTGGCAATCAAATTGCAAGTACGGTAAGCCAGTTCAAATTAAAGGCGGAATC 900		2296	721 CTCAGTGGACACCTAGACTTCAATGGTCGAGTCTTCTCGAATGATGTGCAGTATAACGTC 780	661 AGAGGTGATTCACGAACCGGAAAGACAATGTGGGCTCGTGCATTAGGACCACATAATTAT 720	GREGACTATTTCGGAAGGGGTTCGCTGCGCGCGGAAAGGETCTATTAGTATAG THE CACTOTE ATTTCGGAAGGGGTTCGCTGCTGCAGGGAAAGACCTATTAGTAGAGA	GATAATTATTTCGGGACGGGTGACGCTGCGCCGGATAGACCTGTAAGTATCATCGTC	541 GTTCCTCCATTTCCGTTGTCATCATTCATCAATGTTCCGGTTGTTATGCAAGAATGGGTT 600	541 GTTCCTCCATTTCAAGTCTCTTTCTTTCACTAACGTTCCTGACGAGATGCAGGAATGGGCG 600	481 CAAAATCATAACATCCGCTCTAACCTAGAACGAATATTCGCAAAAGGCTCCGGAACCGTGG 540	421 GGTTCGGTTCAATCTGCCTTAGCGGTTCTAAGGGAAGAACAACCAAAAGATTTTGTATTA 480			AAATCATACATCGACAAGGACGGAGATACAATCGAATGGGGAGATTTCCAAATCGACGGC	241 CCAACCCGGTCAGCACATTTCCATCCGAATATTCAGGGAGCTAAATCGAGCTCCGACGTC 300	TTATTCAATTCGAAGGTAAATTCGTCTGCACAAATAAAAGATTGTTCGACCTGGTATCC	121 AAAAAATTCATCATCAAAGTCTGTGAGGAAACGTCACGAGAATGGTGAACCTCATCATGGG 180 101 CTTTCTTTCAACGTTTCAAACGTAAACGTAACGAATTAACAATTTTTTTCGATCTTTCCATGGC 240	–ი ≫	TGCTCTCTATCTAAAGAAGAAGCACTTTCCCCAATTACAAAAACCTAAATACCCCAGTCAAC	1 ATGCCCCCACCAAAGAATTTAGAGTTCAGTCAAAGAACTATTTCCTAACTTATCCCCAG 60

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                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: US/08/838
FILING DATE:
CLASSIFICATION: 800
ATTORNEY/AGENT INFORMATION:
NAME: Mueller, Lisa V
REGISTRATION NUMBER: 38,978
REFERENCE/DOCKET NUMBER: SVS3
TELECOMMUNICATION INFORMATION:
TELEPHONE: 312-616-5400
TELEPHONE: 312-616-5460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: Stout, John T
APPLICANT: Luu, Hang T
APPLICANT: Maxwell, Douglas
APPLICANT: Allquist, Paul
APPLICANT: Allquist, Paul
APPLICANT: Hanson, Steve
TITLE OF INVENTION: Granegenic Plants Expressing Geminivirus
TITLE OF INVENTION: Genee
NUMBER OF SEQUENCES: 63
CORRESPENDENCES: 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0,
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TOPULCE TYPE: UN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NTI-SENSE:
                                                                                                                                                                                                                                                                                                                                                                              NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM: Bean Golden Mosaic Geminivirus
STRAIN: Type II
INDIVIDUAL ISOLATE: Guatemala
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRANDEDNESS: single
TOPOLOGY: circular
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COUNTRY: U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ADDRESSEE:
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CTTGTTCAGTTCGAAGGTAAGTACCAATGCACGAATAACAGATTCTTCGACCTGGTCTCC
                                                                                      AAGAAATTCATCAAAATTTGCAGAGAGCTTCATGAAAAATGGGGAACCTCATCTCCATGTG
                                                                                                                          TGCCCTATACCGAAAGAAGAAGTTCTTTCGCAACTTCAGAAGATTCATACAGCCACGAAT
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    Dressler, Rockey, Milnamow & Katz
    Two Prudential Plaza, Suite 4700

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78.4%;
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                                                                                                                                                                                                                                                                   Score 691.2; DB 8;
Pred. No. 6.6e-203;
0; Mismatches 228;
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US-08-838-151A-54
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                                                                                                                                                          Sequence 54, Application US/08838151A Publication No. US20010011379A1 GENERAL INFORMATION:
               APPLICANT: Stout, John T
APPLICANT: Luu, Hang T
APPLICANT: Maxwell, Douglas
APPLICANT: Ahlquist, Paul
APPLICANT: Hanson, Steve
TITLE OF INVENTION: Genes
NUMBER OF SEQUENCES: 63
 CORRESPONDENCE ADDRESS:
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                                                      Transgenic
                                                    Plants
                                                    Expressing
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Geminivirus

480

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US-08-838-151A-54
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Best Local Similarity 78.3
Matches 827; Conservative
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INFORMATION FOR SEQ ID NO: 54:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HYPOTHETICAL: NO
ANTI-SENSE: NO
ORIGINAL SOURCE:
ORGANISM: Bean Golden Mosaic Geminivirus
STRAIN: Type II
INDIVIDUAL ISOLATE: Guatemala
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CLASSIFICATION: 800
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOFTWARE: PatentIn Release #1.0, Version #1.30 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NAME: Mueller, Lisa V
REGISTRATION NUMBER: 38
REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
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LOCATION: 1...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LENGTH: 1062 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
TOPOLOGY: circular
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Pred. No. 2.1e-202;
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                                                                                                                                                                             TITLE OF INVENTION: GEMINIVIRUS RESISTANT TRANSGENIC PLANTS
FILE REFERENCE: 5051.458IP
CURRENT APPLICATION NUMBER: US/10/633,850
CURRENT FILING DATE: 2003-08-04
PRIOR APPLICATION NUMBER: US 09/289,346
PRIOR APPLICATION NUMBER: US 09/289,346
PRIOR APPLICATION NUMBER: US 60/125,004
PRIOR APPLICATION NUMBER: US 60/125,004
PRIOR FILING DATE: 1999-03-18
NUMBER: OF SEQ ID NOS: 112
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SEQ ID NO 79
LENGTH: 1056
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Query Match
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APPLICANT: Orozco, Beverly M.
APPLICANT: Gruissem, Wilhelm
                                                         NAME/KEY: CDS
LOCATION: (1)..(1056)
OTHER INFORMATION: TGMV
                                                                                                                                          ORGANISM: Tomato
                                                                                                                                                                  TYPE: DNA
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56.1%;
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Best Local Similarity Matches 773; Conserva
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                                                                                                                                      CAATCGTGCTGCAATCCTGGAGAGGGTGCTAGCTATAAAGTTTTCCTCGACAAAGAGG
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0; Mismatches 276; Indels
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CURRENT APPLICATION NUMBER: US/10/633,850
CURRENT FILING DATE: 2003-08-04
PRIOR APPLICATION NUMBER: US 09/289,346
PRIOR FILING DATE: 1999-04-09
PRIOR APPLICATION NUMBER: US 60/125,004
PRIOR FILING DATE: 1999-03-18
NUMBER OF SEQ ID NOS: 112
SOFTWARE: Patentin version 3.2
SEQ ID NO 83
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Publication No.
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APPLICANT: Orozco, Beverly M.
APPLICANT: Gruissem, Wilhelm
TITLE OF INVENTION: GEMINIVIRUS RESISTANT TRANSGENIC PLANTS
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LOCATION: (1)..(105
OTHER INFORMATION:
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ORGANISM: Tomato
FEATURE:
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Pred. No. 6e-177;
0; Mismatches 276;
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                                                                                                                                                                                                                                                                                                                                                     SEQ ID NO 50
                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                       PRIOR APPLICATION NUMBER: US 09/289,346
PRIOR FILING DATE: 1999-04-09
PRIOR APPLICATION NUMBER: US 60/125,004
PRIOR FILING DATE: 1999-03-18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Hanley-Bowdoin, Linda
APPLICANT: Orozco, Beverly M.
APPLICANT: Gruissem, Wilhelm
TITLE OF INVENTION: GEMINIVIRUS RESISTANT
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CURRENT APPLICATION NUMBER: US/10/633,850
CURRENT FILING DATE: 2003-08-04
                                                                                                                                                                                                                                                                                                                                                                                            NUMBER OF SEQ ID NOS: 112
                                                                                                                                                                                                                  NAME/KEY: misc_feature
LOCATION: (1)...(1056)
OTHER INFORMATION: TGMV AL1 coding
                                                                                                                                                                                                                                                                                TYPE: DNA
ORGANISM: Tomato
FEATURE:
                                                                                                                                                                                                                                                                                                                                      LENGTH: 1056
                                                                                                                               Local Simhes 772;
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                                                                                                                               55.9%; ilarity 73.6%; Conservative
                                                                                                                                                                                                                                                                                                 golden mosaic
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                                                                                                                             Score 605.8; DB 18;
Pred. No. 1.9e-176;
0; Mismatches 277;
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

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ALIGNMENTS

ORIGIN	TITLE Gene discovery JOURNAL Mol. Biochem. MEDLINE 22684048 PUBMED 12798503 COMMENT Contact: Brend. Department of: TIGR 9712 Medical C. Tel: 301-838-3 Fax: 301-838-3 Fax: 301-838-3 DNA was provided Seq primer: TF Class: Sheared Class: Sheared Class: Sheared	RESULT 1 BZ394806/C BZ394806 DEFINITION EINBOO9TF GENERAL SU ACCESSION BZ394806.1 KEYWORDS GSS. SOURCE Entamoeba E
/organism="Entamobba invadens" /mol_type="genomic DNA" /strain="IP-1" /db_xref="taxon:33085" /clone="pINBO09" /clone="mINBO09" /clone="processes of E. invadens /note="vector: pHOSS; Site_1: BstXI; Total genomic DNA was isolated from early log phase trophozoites of E. invadens IP-1 using a Qiagen plant DNA extraction kit. A shotgun medium-size plasmid library (average insert size of 10 - 12 kb) was generated by random mechanical shearing of E. invadens genomic DNA, repairing the ends of DNA fragments with T4 Polymerase, adding BstXI adaptors and ligating into the BstXI site of a pUC-derived vector pHOS2."	Dellen, K., Hall, N., Anderson, I. and Loftus, B. Gene discovery in the Entamoeba invadens genome Mol. Biochem. Parasitol. 129 (1), 23-31 (2003) 22684048 22684048 12798503 Other_GSSs: EINBOO9TR Contact: Brendan Loftus Department of Eukaryotic Genomics TIGR 9712 Medical Center Drive, Rockville, MD 20850, USA Tel: 301-838-3543 Fax: 301-838-3543 Fax: 301-838-0208 Email: enta@tigr.org DNA was provided by Daniel Eichinger Seq primer: TF Seq primer: TF Class: Bheared ends.	BZ394806 BZ394806 BZ394806 BZ394806 BZ394806 BZ394806 BZ394806.1 GI:30241347 GSS. Entamoeba invadens Entamoeba (Clark, C.G., Eichinger, D., Paul, J., van

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Saurin,W., Bernot,A. and Weissenbach, J.
Characterization and repeat analysis of the compact genome of the freshwater pufferfish Tetraodon nigroviridis
Genome Res. 10 (7), 939-949 (2000)
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                                                                                                                                                     Submitted (12-APR-2000) Genoscope - Centre National de BP 191 91006 EVRY cedex - FRANCE (E-mail: segref@genos - Web; www.genoscope.cns.fr)
This sequence is a single read and was generated as par scale clone-end sequencing project of the Tetradon nig genome. For more information, please take a look at http://www.genoscope.cns.fr/Tetraodon.
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071D12 of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Estimate of human gene number provided by genome-wide analysis using Tetraodon nigroviridis DNA sequence
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Tetraodon nigroviridis Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Eukaryota; Metazoa; Chordata; Craniata; Euteleostei; Neoteleostei; Acanthopterygii; Teleostei; Euteleostei; Neoteleostei; Acanthomorpha; Acanthopterygii; Percomorpha; Tetraodontiformes; Tetraodontoidea; Tetraodontidae; Tetraodon.
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GSS; genome survey sequence.
Tetraodon nigroviridis
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Fizames, C., Fischer, C., Bouneau, L., Billault, A.,
                                                                                                                                                                                                                                                                                                                      Direct Submission
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              /organism="Tetraodon nigroviridis"
/mol type="genomic DNA"
/db_xref="taxon:99883"
/clone="071D12"
/clone="1ib="G"
/note="Genoscope sequence ID : COB
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library G from Tetraodon
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ozouf-Costaz, C.,
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                                                                                                                                                                                                                                                                                                                                                                                                                                Email: http://genome.arizona.e
plate: 08 row: B column: 20.
Location/Qualifiers
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Kim,H., Yu,Y., Kudrna,D., Hatfield,J., Stum,D., Mueller,C.,
Vidall,J.A., Rapp,R.A., Wendel,J.F., Rao,K., Soderlund,C. an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; rosids; eurosids II; Malvales; Malvaceae; Malvoideae; Gossypium.
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The University of Arizona
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                               ATCGTGCTTTGCAATCCTGGTGAGGGTGCCAGCTATAAAGAGTTCTTAGACAAAGCAGAA
                                                                 GAGTGGGCAACAAGGGATATGGACAGTATAACCCTTCAAATCAAATAGGCCATCAACGAG
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/clone="Vector: pCMV.SPORT-6.1; Site_1: NotI; Site_2:
/note="Vector: pCMV.SPORT-6.1; Site_1: NotI; Site_2:
/scorv; Library made by Invitrogen with RNA supplied by
BcoRV; Library made by Invitrogen with RNA supplied by
Wendle lab. Directional cloned into NotI-EV. Colonies
plated/picked by AGI. More glycerol clones held in -80
                                                                                                                                                                                                                                                                                              /tissue type="whole seedlings"
/dev_stage="first true leaves"
/lab_host="DH10B"
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/mol_type="mRNA"
/db_xref="taxon:29730"
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High Throughput Sequencing Center
University of Washington
401 Queen Anne Avenue North, Seattle, WA 98109, USA
Tel: (206) 616-3818
Fax: (206) 616-3887
Email: jwallace@u.washington.edu
Clones may be purchased from Research Genetics (info@resgen.com).
BAC end Web Server: http://www.htsc.washington.edu
Plate: 3143 row: E column: 1
Seq primer: T7
Class: BAC ends
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Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (Dases 1 to 864)
Mahairas,G.G., Wallace,J.C., Smith,K., Swartzell,S., Holzman,T.,
Mahairas,G.G., Wallace,J.C., Smith,K., Zhao,S., Adams,M.D. au
Wolfer,A., Shaker,R., Furlong,J., Young,J., Zhao,S., Adams,M.D. au
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864 bp DNA linear GSS 10-NOV-1999
HS_3143_A1_C01_T7C CIT Approved Human Genomic Sperm Library D Homo
sapiens genomic clone Plate=3143 Col=1 Row=E, genomic survey
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                                                                                                                                                                                                                                                                                                                                                                         h 3.8%;
Similarity 50.8%;
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       TCTGCTAATGATT 397
                                                        TTTATTAACCTGTCTGAAAGATGACTAGTTAGCAGCAGGTTTTCCAGTAGAGTGGGATAA 411
                                                                                                                                                    TTGACTGTGAACGGGGCTAGATTTACATCCAATGTTATATAATATCTCCTTATTGAGGGC
                                                                                                                                                                                                                                                      CACTGATACAAAATGCATTCTTCATCTTAGTATCCCAAAAGCCCTCCTAACTACTTTCC
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                                                                                                   GATACAATCGAATGGGGAGATTTCCAAATCGACGGCAGATCTGCCAGAGGAGGCCAGCAG 384
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/note="Organ: sperm; Vector: pBeloBAC11; BAC Clones in
E-Coli DH10B"
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/db_xref="taxon:9606"
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CNS011PO/c
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                          713 AAAMATTÄAÄTBSSAYAAATCSSATTÄATTSSSATWAATCCAAAAATYASACCMCAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BP 191 91006 EVAL CELLONG. IT NOW JEEP 191 9100 EVAL AS PART OF A PROBE IN WWW.genoscope.cns.fr)

- Web: www.genoscope.cns.fr)

Determination of this BAC-end sequence was carried out as part of a collaboration with the European Drosophila Genome Project (EDGP) - http://www.edgp.ebi.ac.uk - . This Drosophila melanogaster BAC http://www.edgp.ebi.ac.uk - . This Drosophila melanogaster BAC library (Dros BAC) was made by Alain Billaud at CEPH (Centre d'Etude du Polymorphisme Humain) with funding provided by a MRC project grant. The DNA was prepared from embryos by Alain Bucheton and Genevieve Payan. It has been constructed in the vector
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         66 TCTATCTAAAGAAGCACTTTCCCCAATTACAAAACCTAAATACCCCCAGTCAACAAGAA
BW370082 HW370082 Yutaka Satou unpublished cDNA library, mature adult whole animal Ciona intestinalis cDNA clone cima849d15 5', mRNA sequence.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6 CCCACCAAAGAATTTAGAGTTCAGTCAAAGAACTATTTCCTAACTTATCCCCAGTGCTC
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Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota;
Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
Ephydroidea; Drosophilidae; Drosophila.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AL100566.1 GI:5612177
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Similarity 39.0%;
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/mol_type="genomic DNA"
/db xref="taxon:7227"
/clone="BACNO6KO6"
/clone lib="DrosBAC"
/plasmid="pBeloBAC11"
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Pred. No. 1.4;
9; Mismatches 121;
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                                                             Contact: Nori Satch
Department of Zoology
Kyoto University
Sakyo-ku, Kyoto, Kyoto 606-8502, Japan
Tel: 81-75-753-4081
Fax: 81-75-705-1113
                                                                                                                                                         Satoh,N., Satou,Y., Kohara,Y. and Shin-i,T. Expressed genes in Ciona intestinalis Unpublished (2000)
                                                                                                                                                                                                                                                         Ciona intestinalis
Ciona intestinalis
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Sakyo-ku, Kyoto, Kyoto 606-8502,
Tel: 81-75-753-4095
Fax: 81-75-705-1113
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                               Email: satoh@ascidian.zool.kyoto-u.ac.jp.
Location/Qualifiers
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Location/Qualifiers
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Department of Zoology
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Phlebobranchia; Cionidae; Ciona.
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   /organism="Ciona intestinalis"
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/dev stage="mature adult"
/clone lib="Yutaka Satou unpublished cDNA library, mature
adult whole animal"
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/mol_type="mRNA"
/db_xref="taxon:7719"
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CNS018M5/c
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                                              620 АЛАМИМИТТАМАЛАМАЛТАЛАЙАЙАЛАЛАЛАТТМАЛАЙАЛАЛМАСТАТИТҮТҮМТТАТАМА
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     741 CAATGGTCGAGTCTTCTCGAATGATGTGCAGTATAACGTCATTGATGACATCGCACCGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   681 GAAGACGATGTGGGCGCGTGCGTTAGGCCCACATAACTATCTCAGTGGACACCTAGACTT
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72 TAAAGAAGAAGCACTTTCCCAATTACAAAACCTAAATACCCCAGTCAACAAGAAATTCAT 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Submitted (23-JUL-1999) Genoscope - Centre National de Sequencage : BP 191 91006 EVRY cedex - FRANCE (E-mail : seqref@genoscope.cns.fr - Web : www.genoscope.cns.fr)

Determination of this BAC-end sequence was carried out as part of a collaboration with the European Drosophila Genome Project (EDGP) - http://www.edgp.ebi.ac.uk - This Drosophila melanogaster BAC hibrary (Dros BAC) was made by Alain Billaud at CEPH (Centre d'Etude du Polymorphisme Humain) with funding provided by a MRC project grant. The DNA was prepared from embryos by Alain Bucheton and Genevieve Payan. It has been constructed in the vector
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  83;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CNS018M5 697 bp DNA linear GSS 26-JUL-1999 Drosophila melanogaster genome survey sequence T7 end of BAC BACN14C07 of DrosBAC library from Drosophila melanogaster (fruit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 fly), genomic survey sequence.
AL109511
AL109511.1 GI:5629815
GSS.
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Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota;
Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
Ephydroidea; Drosophilidae; Drosophila.

[ bases 1 to 697)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Drosophila melanogaster (fruit fly)
Drosophila melanogaster
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                                                                                         AAAGAAATTTAGAGTTCAGTCAAAGAACTATTTCCTAACTTATCCCCAGTGCTCTATC
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                                                                                                                                                                                                                                                         /clone_lib="DrosBAC"
/plasmid="pBeloBAC11"
/note="end : T7"
                                                                                                                                                                                                                                                                                                                              /organism="Drosophila melanogaster"
/mol_type="genomic DNA"
/db xref="taxon:7227"
/clone="BACN14C07"
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/db_xref="taxon:7719"
/clone="cigg14g03"
/clssue_type="whole animal"
/rissue_type="whole animal"
/dev_stage="egg"
/clone_lib="Nori Satoh unpublished cDNA library,
                                                                                                                                                                                                                                                                                                                                                                                                                                                     ocation/Qualifiers
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39.1%;
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Nishimura, M., Yokoi, N., Miki, T., Horikawa, Y., Yoshioka, H.,
Takeda, J., Ohara, O. and Seino, S.
Construction of a multi-functional cDNA library specific for pancreatic islets and its application to microarray (npublished (2004))
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Contact: Susumu Seino
Division of Cellular and Molecular Medicine
Kobe University Graduate School of Medicine
7-5-1 Kusunoki-cho, Chuo-ku, Kobe, Hyogo 650-0017,
Tel: 81-78-382-5360
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Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
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Similarity 55.4%;
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Location/Qualifiers
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                                                                                                              AAACTTGAAGTGAAAAAAAAAAAAAAAAAAAAAGCGGCCGCCCAGCTTTCTTG
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739 bp mRNA linear EST 24-MAY-2004 AGENAE Gallus gallus multi-tissues normalized and
                                                                                                                                                                                                                                                                                                                                                                                                                  /tissue_type="pancratic islet"
/dev_stage="adult"
/clone_lib="mouse (C57BL/6) pancreatic islet library with
recombination_based method"
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/strain="C57BL/6"
/db_xref="taxon:10090"
/clone="mic30074"
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411
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INRA, UMR INRA-ENSAR Genetique Animale
65, rue de Saint-Brieuc, RENNES cedex, 35042,
Tel: +33 (0) 2.23.48.54.63
Fax: +33 (0) 2.23.48.54.70
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BX262586
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Email: Madeleine.Douaire@roazhon.inra.fr
Sequence cleaned of vector, adaptator and repetitions. Contact us
at sigenasupport@jouy.inra.fr to obtain the chromatogram of this
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 (bases 1 to 739)
Herault, F., Le Meuth-Metzinger, V., Desert, C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Plate: 0008
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                                                                                                                 GACCCTGGTCCCTTAATTCCAGACTCCCTGGCACGTGATGTTTCTCCACTCCCTTTTACT
                                                       TCTTTCACTAACGTTCCTGACGA 584
GCTTCCACAATGCTGCAGTGGA 433
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /clone="gcal0008c.h.19"
/tlssue_type="multi-tissues"
/dev_stage="from embryos to adults"
/lab_host="DH108"
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/mol_type="mRNA"
/db_xref="taxon:9031"
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CNSOA7F8 2433 bp mRNA linear HTC Arabidopsis thaliana Full-length cDNA Complete sequence GSLTLS16ZF06 of Adult vegetative tissue of strain col-0 Arabidopsis thaliana (thale cress).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       genome released by MIPS (Munich Information center for Protein Sequences). 5 prime and 3 prime are assembled with Phrap. http://www.genoscope.cns.fr/externe/sequences/Banque_Projet_EF/Full
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Genoscope members carried out sequencing and annotation: Caste V., Aury J.M., Jaillon O., Wincker P., Menard M., Cruaud C., Schachter V., Weissenbach J., Salanoubat M. URGV INRA: Clepet C., Caboche M.
Annotation is based on the June 2003 version of the Arabidopsis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Submitted (18-NOV-2003) Genoscope - Centre National de Sequencage BP 191 91006 Cedex - FRANCE (E-mail : seqref@genoscope.cns.fr)
- Web : www.genoscope.cns.fr)
The sequences are based on single pass reads.
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Castelli,V., Aury,J.M., Jaillon,O., Wincker,P., Clepet,C.,
Menard,M., Cruaud,C., Quetier,F., Scarpelli,C., Schachter,V.,
Temple,G., Caboche,M., Weissenbach,J. and Salanoubat,M.
Whole Genome Sequence Comparisons and 'Full-Length' cDNA Sequences:
Whole Genome Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; rosids; eurosids II; Brassicales; Brassicaceae; Arabidopsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HTC; GSLT cDNA.
Arabidopsis thaliana (thale cress)
Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               http://www.genoscope.cns.fr/cgi-bin/ggb/ggb?source=Arabidopsis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Life Technologies (a division of Invitrogen) members carried out full-length librairies construction : Temple G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Unpublished
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                                                                                                                                                                                                                                                                                                                                                Similarity
                                      CAATCIGCCTTAGCGGTTCTAAGGGAAGAACAACCAAAAGAT 471
                                                                                                                                                            AAGGGTAAGGATAGAGAAAAGAGTTGGAATGGGAAATAACAATAATGATGGGAAGGTTAAC
                                                                                                                                                                                                  ATCGACAAGGACGGAGATACAATCGAATGGGGAGATTTCCAAATCGACGGCAGATCTGCC
                                                                                                                                                                                                                                                                        TCAGCACATTTCCATCCGAATATTCAGGGAGCTAAATCGAGCTCCGACGTCAAATCATAC
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                                                                              AGAAGAAGGGAGCAAATGGCAGATGATTCTGACTATTCAAGAAATTCCGGCGATAAGTCT
                                                                                                                    AGAGGAGGCCAGCAGTCTGCTAATGATTCATATGCGAAAGCATTAAATGCAGGTTCGGTT
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/gene="At3g15220"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /tissue_type="Adult_vegetative_tissue"
/plasmid="pCMVSPORT_6"
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/clone="GSLTLS16ZF06"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    strain="Col-0"
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     type="mRNA"
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BX200121
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PUHMZ34TB ZM 0.6 1.0 KB Zm
genomic survey sequence.
CC375636
CC375636.1 GI:30849253
GSS.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     73 AAAGAAGAAGCACTTTCCCCAATTACAAAACCTAAATACCCCAGTCAACAAGAAATTCATC
9712 Medical Center Drive, Tel: 301-838-5843
                                                                                    Unpublished (2003)
Other_GSSs: PUHMZ34TD
                                                                                                                                                                                       1 (bases 1 to 762)
Whitelaw, C.A., Quackenbush, J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Submitted (27-JAN-2003) The Sanger Institute, Campus, Hinxton, Cambridgeshire, CB10 1SA, UK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Actinopterygii; Neopterygii; Teleostei; Ostariophysi; Cypriniformes; Cyprinidae; Danio.
                                                             Contact: Cathy Whitelaw
                                                                                                                              Maize Genomics Consortium
                                                                                                                                                                   Resnick, A., Fraser, C.M.,
                                                                                                                                                                                                                                   clade; Panicoideae; Andropogoneae;
                                                                                                                                                                                                                                                     Eukaryota; Viridiplantae; Streptophyta; E:
Spermatophyta; Magnoliophyta; Liliopsida;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       http://www.sanger.ac.uk/Projects/D_rerio/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Keygene. Further details:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 This sequence was generated from the SP6 end of BAC 210B11. 210B11 is part of the Daniokey BAC Library created by R. Plasterk and N.V.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Campus, Hinxton, Cambridgeshire, (
humquery@sanger.ac.uk Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 (bases 1 to 738)
Humphray, S.J., Huckle, E. and Durham, J.L.
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Danio rerio (zebrafish)
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/mol_type="genomic DNA"
/db_xref="taxon:7955"
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tissue_type="Testis"
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Pred. No. 3
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                                                                                                                                                                   Van Aken,S., Utterback,T.,Y., San Miguel,P., Ma,J. and
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genomic clone ZMMBTa488E20,
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a; Poales; Poaceae; PACCAD
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(. E-mail e
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BZ826521/c
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                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; PACCAD clade; Panicoideae; Andropogoneae; Zea.

1 (bases 1 to 933)

Whitelaw, C.A., Quackenbush, J., Van Aken, S., Utterback, T., Resnick, A., Fraser, C.M., Yuan, Y., San Miguel, P., Ma, J. and
                                                                                                                                                                                                                                                                                                               Maize Genomics Consortium Unpublished (2003) Other GSSs: PUGCL17TB Contact: Cathy Whitelaw
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   genomic survey sequence BZ826521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BZ826521 933 bp DNA linear GSS 18-MPUGCL17TD ZM_0.6_1.0_KB Zea mays genomic clone ZMMBTa336D10,
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Class: sheared ends.
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Email: whitelaw@tigr.org
                                                                                                                                                                                      Seq primer: TF
Class: sheared ends.
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/strain="B73"
            /clone="ZMMBT@336D10"
/clone="M 0.6 1.0 KB"
/note="Vector: pCR4-TOPO; Site 1: EcoRI; 0.6-1.0 kb
/note="Vected genomic DNA library"
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/strain="B73"
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CG168857
CG168857.1 GI:34059658
GSS.
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Whitelaw, C.A., Quackenbush, J., Var
                                                                                                                                                                                                                                                                                                                                                                                              Class: sheared ends
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Tel: 301-838-5843
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Contact: Cathy Whitelaw
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                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                             Email: whitelaw@tigr.org
                                                                                                                                                                                                                                                                                                                                                                                                                                            Fax: 301-838-0208
                                                            TATTCGCAAAGGCTCCGGAACCGTGGGTTCCTCCATTTCAAGTCTCTTCTTTCACTAACG
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Y., San Miguel,P., Ma,J. and
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Search completed: December 4, 2004, 16:15:44
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Copyright (c) 1993 - 2004 Compugen Ltd.
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	107	Length) B	ID	Description
21	1908 1902	98.4 98.1	361 361	N N	AAW34336 AAW34325	Aaw34336 Aaw34325
w	1892	97.6	361	N	AAW34326	Aaw34326
4	1879	96.9	361	N	AAW34324	Aaw34324
ر ت	1575		353	_	AAP70407	Aap70407
σ	1572	81.1	353	N	AAW34332	Aaw34332
7	1572	•	353	N	AAW34338	Aaw34338
œ	1567	•	353	N	AAW34333	Aaw34333
9	1566	•	353	N	AAW34334	Aaw34334
10	1564	•	353	N	AAW34335	Aaw34335
11	1499	77.3	356	w	AAB18687	Aab18687
12	1308.5	67.5	359	N	AAR88872	Aar88872
13	1305.5	67.3	359	N	AAR88871	Aar88871
14	1305.5	67.3	359	N	AAR88870	Aar88870
15	1293.5	66.7	357	N	AAW34337	Aaw34337
16	1293.5	66.7	357	N	AAW34329	Aaw34329
17	1290.5	66.6	357	N	AAW34330	Aaw34330
18	1286.5	66.3	357	N	AAW34331	Aaw34331
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20	1242	64.1	361	Н	AAP70562	Aap70562
21	661	34.1	131	N	AAW34327	Aaw34327
22	599	30.9	142	σ	ABP58120	Abp58120
23	486	25.1	335	w	AAY92318	Aay92318
24	277	14.3	292	w	AAY92317	Aay92317
S D	280		264	u	AAY44702	Aav44702

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137	141	200	207	208	. 209	210	210	212	214	214	216	216	217	218	224	224	241	257	200
7.1	7.3	10.3	10.7	10.7	10.8	10.8	10.8	10.9	11.0	11.0	11.1	11.1	11.2	11.2	11.6	11.6	12.4	13.3	T. 0.1
27	27	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	143	264	407
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AAW82413	AAW82414	AAB18682	AAB18683	AAB18689	AAB18678	AAB18680	AAB18684	AAB18692	AAB18690	AAB18679	AAB18685	AAB18681	AAB18686	AAB18688	AAB18691	AAB18677	AAY92706	ADM48184	25177.00
Aaw82413	Aaw82414	Aab18682	Aab18683	Aab18689	Aab18678	Aab18680	Aab18684	Aab18692	Aab18690	Aab18679	Aab18685	Aab18681	Aab18686	Aab18688	Aab18691	Aab18677	Aay92706	Adm48184	
TGMV AL1	BGMV AL1	Mutant pe	Peptide f	Geminivir	Polypept 1	1													

ALIGNMENTS

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17-OCT-2003
27-APR-1998
disease resistance.
                                           Tomato mottle virus AC1 protein.
                                                                                                                    AAW34336;
                                                                                                                                               AAW34336 standard; protein; 361
                                                                       (revised)
(first en
                                                                         entry)
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Geminivirus; ToMoV; AC1 gene; transdominant mutation; transgenic plant;

Tomato mottle virus; isolate Florida.

WO9739110-A1.

23-OCT-1997.

15-APR-1997; 97WO-US006300

16-APR-1996; 96US-0015517P.

(SEMI-) SEMINIS VEGETABLE SEEDS INC. (WISC) WISCONSIN ALUMNI RES FOUND.

Stout JT, Luu HT, Hanson SF, Maxwell DP, Ahlquist PG;

WPI; 1997-526447/48. N-PSDB; AAT93294.

Transgenic plants expressing geminivirus AC1 and C1 wild-type and mutant genes - have increased resistance to geminivirus infection e.g. tomato mottle virus, tomato yellow leaf curl virus or bean golden mosaic

Example 3.3; Page 57-58; 132pp; English.

RESULT 1
AAW34336
AID AAW3
AXX 17-Q
DT 27-A
XXX Gemi
KW Gemi
KW dise
XX W097
XX Toma
XX W097
XX IS-A
XX W1-A
XX PA (WISE
PA (WISE This protein comprises the wild-type AC1 protein of tomato mottle virus (ToMoV), a geminivirus that has a bipartite genome. The AC1 gene (see AAT93294) must be expressed for efficient replication of the two genomic components, DNA-A and DNA-B. The AC1 protein has a DNA binding site specific to the DNA-A common region, a DNA nicking activity, and an NTP binding activity. The invention involves production of transgenic plants containing DNA comprising AC1 or C1 wild-type or mutant sequences that negatively interfere in trans with geminiviral replication during infection. Such transgenic plants are resistant to viral infection. The

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ARESULT 2
AAW34325
ID AAW3
XX AAW3
AC AAW3
AC AAW3
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Best Local Similarity
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                              WPI; 1997-526447/48
                                                            Stout JT,
                                                                                                                                   16-APR-1996;
                                                                                                                                                                                                                                                      Synthetic
                                                                                                                                                                                                                                                                   Tomato mottle virus; isolate Florida
                                                                                                                                                                                                                                                                                                transgenic plant; disease resistance.
                                                                                                                                                                                                                                                                                                            Geminivirus; ToMoV-ACldlm1; ACl gene; transdominant mutation;
                                                                                                                                                                                                                                                                                                                                           Tomato mottle virus AC1 mutant ToMV-AC1dlm1
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                                                                                      (SEMI-) SEMINIS VEGETABLE SEEDS INC. (WISC ) WISCONSIN ALUMNI RES FOUND.
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                                                            Luu HT,
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                                                            Hanson SF,
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98.3%;
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Pred. No. 4.5e-169;
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Transgenic plants expressing geminivirus AC1 and C1 wild-type and mutant genes - have increased resistance to geminivirus infection e.g. tomato mottle virus, tomato yellow leaf curl virus or bean golden mosaic
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This protein comprises a transdominant lethal mutant, designated ToMoV-ACIDIMI, of tomato mottle virus (TOMOV) ACI protein (see AAM34336). It is encoded by a mutant ACI gene (see AAM33283) of tomato mottle virus virus (TOMOV), and carries a mutation in an NTP-binding domain. The ACI gene (see also AAT93294) must be expressed for efficient replication of the two genomic components, DNA-A and DNA-B, of the bipartite TOMOV genome. The invention involves production of transgenic plants containing DNA comprising geminivirus ACI or Cl wild-type or mutant sequences that negatively interfere in trans with geminiviral replication during the infection. Such transgenic plants are resistant to viral infection. The ACI genes are especially from TOMOV, tomato yellow leaf curl virus or bean golden mosaic geminivirus (see AAT93282-93) and encode polypeptides (see AAW34324-35) that have mutations in the highly conserved DNA-nicking and/or NTP-binding domains

Sequence 361 AA;

Gaps

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Query Match
Best Local Similarity
Matches 354; Conserv
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1.6e-168;
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27-APR-1998

(first

entry)

AAW34326

standard; protein;

361

Tomato mottle virus; isolate Florida Synthetic.

transgenic

Geminivirus; ToMoV-AC1dlm23; AC1 gene; Tomato mottle virus AC1 mutant ToMV-AC1dlm23.

plant; disease

resistance.

transdominant

mutation;

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Matches 353; Conserv
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Transgenic plants expressing geminivirus AC1 and C1 wild-type and mutant genes - have increased resistance to geminivirus infection e.g. tomato mottle virus, tomato yellow leaf curl virus or bean golden mosaic
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97.8%;
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Pred. No. 1.4e-167;
3; Mismatches 5;
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Best Local S
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                                                                                                                                                                                                                                                                                     This protein comprises a transdominant lethal mutant, designated ToMoV-ACIDIM, of tomato mottle virus (ToMoV) ACI protein (see AAM34336). It is encoded by a mutant ACI gene (see AAT33282) of tomato mottle virus virus (ToMoV), and carries 3 mutations in its NTP-binding domains. The ACI gene (see also AAT93294) must be expressed for efficient replication of the two genomic components, DNA-A and DNA-B, of the bipartite ToMoV genome. The invention involves production of transgenic plants containing DNA comprising geminivirus ACI or CI wild-type or mutant sequences that negatively interfere in trans with geminiviral replication during infection. Such transgenic plants are resistant to viral infection. The ACI/CI genes are especially from ToMoV, tomato yellow leaf curl virus or bean golden mosaic geminivirus (see AAT93282-93) and encode polypeptides (see AAM34324-35) that have mutations in the highly conserved DNA-nicking and/or NTP-binding domains
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Transgenic plants expressing geminivirus AC1 and C1 wild-type and mutant genes - have increased resistance to geminivirus infection e.g. tomato mottle virus, tomato yellow leaf curl virus or bean golden mosaic
                                                                                                                                                                                                                                                            Sequence 361 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 1997-526447/48.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         16-APR-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Tomato mottle virus; isolate Florida
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     transgenic plant; disease resistance
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Geminivirus; ToMoV-AC1dlm; AC1 gene; transdominant mutation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Tomato mottle virus AC1 mutant ToMV-AC1dlm
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       27-APR-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAW34324 standard; protein; 361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Example 3.4; Page 60-62; 132pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (SEMI-) SEMINIS VEGETABLE SEEDS INC. (WISC ) WISCONSIN ALUMNI RES FOUND.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       15-APR-1997;
   121
                                121
                                                                61
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                                                                                                                                                1 MPPPKKFRVQSKNYFLTYPQCSLSKEEALSQLQNLNTPVNKKFIKICRELHENGEPHLHV
                                                                                                                                                                                                              Similarity
                                                                                 LVQFEGKYQCTMNRFFDLVSPTRSAHFHPNIQGAKSSSDVKSYIDKDGDTIEWGDFQIDG
                    RSARGGQQSANDSYAKALNAGSVQSALAVLREEQPKDFVLQNHNIRSNLERIFAKAPEPW
                                                                LVQFEGKYQCTNNRFFHLVSPTRSAHFHPNIQGAKSSSDVKSYIDKDGDTIEWGDFQIDG
 RSARGGQQSANDSYAKALNASSVQSALAVLREEQPKDFVLQNHNIRSNLERIFAKAPEPW
                                                                                                                               MPPPKKFRVQSKNYFLTYPQCSLSKEEALSQLQNLNTPVNKKF1K1CRELHENGEPHLHV
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                                                                                                                                                                                                             96.9%;
97.2%;
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                                                                                                                                                                                          Maxwell DP,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ahlquist
                                                                                                                                                                                                                            Length 361;
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181

VPPFQVSSFTNVPDEMQEWADNYFGTGDAAPPDRPVSIIVEGDSRTGKTMWARALGPHNY 240

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ARESULT 5
AAP704D7
ID AAP7
ID AAP7
XX AAP7
XX AAP7
XX AAP7
XX P1
DT 25-M
DT 25-M
CX P1
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XX JP61
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Best Local
                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        The sequence encoding this protein may be taken along with the -a DNA sequence and a suitable resistance gene, and used to create a recombinant plant vector. See also AAN70629. (Updated on 25-MAR-2003 to correct PA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 25-MAR-2003
02-MAY-1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Disclosure;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                New DNA and hybrid DNA - used for recombinant vector of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 1987-159662/23.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                14-NOV-1986.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JP61257186-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bean golden mosaic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Plant vector
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORF 4 gene product
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAP70407;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAP70407 standard; protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          10-MAY-1985;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            10-MAY-1985;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (TEIJ )
181 VPPFQVSSFINVPDEMQEWADNYFGTGDAAPPDRPVSIIVEGDSRTGKTMWARALGPHNY
                                                                                 121
                                                                                                        121 RSARGGQQSANDSYAKALNAGSVQSALAVLREEQPKDFVLQNHNIRSNLERIFAKAPEPW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       361 Ġ 361
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                                                                                                                                                                                                                                                                                                                                                                                      281;
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                                                                                                                                                                                                                                                                                                                                                                              Similarity 79.8
81; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       353
                                                                                 RSARGGQQSANDSYAKALNADSIESALTILKEEQPKDYVLQNHNIRSNLERIFFKVPEPW
                                                                                                                                                                               LIQFEGKFICTNKRLFDLVSTTRSAHFHPNIQGAKSSSDVKEYIDKDGVTIEWGQFQVDG
                                                                                                                                                                                                                 MPPPQRFRVQSKNYFLTYPRCTIPKEEALSQLQKIHTTTNKKFIKVCEERHDNGEPHLHA
                                                                                                                                                                                                                                                                                                               MPPPKKFRVQSKNYFLTYPQCSLSKEEALSQLQNLNTPVNKKFIKICRELHENGEPHLHV
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LSGHLDFNGRVFSNDVQXNVIKYIAPHYLKLKHWKELLGAQKDWQSNCKYGKPVQIKGGI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LSGHLDFNGRVFSNDVQYNVIDDIAPHYLKLKHWKELLGAQKDWQSNCKYGKPVQIKGGI
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               virus
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                                                                                                                                                                                                                                                                                                                                                                                                           81.2%;
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                                                                                                                                                                                                                                                                                                                                                                                 Score 1575; DB 1;
Pred. No. 5.4e-138;
14; Mismatches 37;
                                                                                                                                                                                                                                                                                                                                                                                                                                Length
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MPPPQRFRVQSKNYFLTYPRCPIPKEEVLSQLQKIHTATNKKFIKVCEERHENGEPHLHA

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                       Query Match
Best Local S
                                                                                                                                                                                     This protein comprises a control mutant of the bean golden mosaic virus (BGMV) C1 protein (see AAW34338) that is required for replication. It is encoded by mutated C1 open reading frame BGAC190 (see AAT93290). The invention involves production of transgenic plants containing DNA comprising geminivirus C1 or Ac1 wild-type or mutant sequences that negatively interfere in trans with geminiviral replication during infection. Such transgenic plants are resistant to viral infection. The AC1/C1 genes are especially from BGMV, tomato mottle virus or tomato yellow leaf curl virus (see AAT93282-93) and encode polypeptides (see AAW34324-35) that have mutations in the highly conserved DNA-nicking and/or the NTP-binding domains. (Updated on 17-OCT-2003 to standardise Official)
                                                                                                                                                                      and/or the field)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Transgenic plants expressing geminivirus AC1 and C1 wild-type and mutant genes - have increased resistance to geminivirus infection e.g. tomato motile virus, tomato yellow leaf curl virus or bean golden mosaic
                                                                                                                 Sequence 353 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      N-PSDB; AAT93290.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Stout JT,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Geminivirus; BGMV; Cl gene; transdominant mutation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Bean golden
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27-APR-1998
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           15-APR-1997;
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                             Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LSGHLDFNGRVFSNDVQYNVIDDIAPHYLKLKHWKELLGAQKDWQSNCKYGKPVQIKGGI 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         standard; protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VPPFPLSSFVNIPVVMQDWVDDYFGRGSAARPERPISIIVEGDSRTGKTMWARALGPHNY
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Score 1572; DB 2;
Pred. No. 1e-137;
1; Mismatches 38;
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RESULT 7
AAW34338
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                                                         This sequence comprises the bean golden mosaic virus (BGMV) C1 protein that is required for replication. The invention involves production of transgenic plants containing DNA comprising C1 or AC1 wild-type or mutant sequences that negatively interfere in trans with geminiviral replication during infection. Such transgenic plants are resistant to viral infection. The AC1/C1 genes are especially from BGMV, tomato mottle virus or tomato yellow leaf curl virus (see AAF93382-93) and encode polypeptides (see AAF93424-35) that have mutations in the highly conserved DNA-nicking domain and/or the NTP-binding domains. (Updated on 17-OCT-2003 to standardise OS field)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Transgenic plants expressing geminivirus AC1 and C1 wild-type and mutant genes - have increased resistance to geminivirus infection e.g. tomato mottle virus, tomato yellow leaf curl virus or bean golden mosaic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Bean golden
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             17-OCT-2003
27-APR-1998
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Sequence 353

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This protein comprises a transdominant lethal mutant of the bean golden mosaic virus (BGMV) C1 protein (see AAW34338) that is required for replication. It is encoded by mutated C1 open reading frame BGAC221 (see AAT93291) and carries a mutation in the NTP-binding domain. The invention involves production of transgenic plants containing DNA comprising

Example 5; Page 107-109; 132pp; English.

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Matches
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Best Local Similarity
                                                                                               Transgenic plants expressing geminivirus AC1 and C1 wild-type and genes - have increased resistance to geminivirus infection e.g. to mottle virus, tomato yellow leaf curl virus or bean golden mosaic
                                                                                                                                              WPI; 1997-526447/48.
N-PSDB; AAT93291.
                                                                                                                                                                                                                                                                                                                                                                                   Bean
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27-APR-1998
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                                                                                                                                                                                                                                                                                                                                                  resistance.
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Pred. No. 1e-137;
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RESULT 9
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Best Local Sim.
Matches 282;
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  Transgenic plants expressing geminivirus AC1 and C1 wild-type and mutant genes - have increased resistance to geminivirus infection e.g. tomato
                                                                                         N-PSDB;
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27-APR-1998
                                                                                                                WPI; 1997-526447/48.
                                                                                                                                                                                                                                                                                                                                                                      15-APR-1997;
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                                                                                      AAT93292.
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(first en
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Pred. No. 3e-137;
1; Mismatches 39; Indels
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RESULT 10
AAW34335
ID AAW34
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DT 17-OC
DT 27-AP
XX Gemin
XX Gemin
KW disea
XX Gean
XX Hoops
XX H

Bean golden mosaic geminivirus C1 BGA262 mutant.

17-OCT-2003 27-APR-1998 AAW34335;

(revised) (first entry)

AAW34335 standard;

protein;

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disease Geminivirus;

resistance.

BGMV; C1

gene;

transdominant

mutation;

transgenic plant;

golden

mosaic

virus;

type

II isolate

Guatemala

16-APR-1996;

15-APR-1997;

97WO-US006300 96US-0015517P

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 353 AA;
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                  PAIVLCNPGEGASYKEFLDKAENTGLKNWTIKNAIFITLTAPLYQESTQASQ 352
                                                                    LIQFEGKFVCTNKRLFDLVSSTRSAPFHPNIQGAKSSSDVKAYIDKDGVTIEWGQFQVDG
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PSIVLCNPGEGSSYKDFLDKEENRALHNWTIHNAIFVTLTAPLYQSTTQDCQ
                                                                                                                                           VPPFPLSSFINVPVVMQEWVDDYFGRGSAARPERPISIIVEGDSRTGHTMWARALGPHNY
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80.1%; Pred. No. 3.7e
tive 31; Mismatches
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3.7e-137;
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RESULT 11
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AC AAB18
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CT 22-JA
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XX AMinc
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KW Gemin
KW ribos
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Best Local Similarity
Matches 282; Conserv
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                                                                                                                                                                                             AAB18687 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 353
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Tomato golden mosaic virus
                                  Geminivirus; replication ribosome binding region;
                                                                                      Amino acid sequence of a geminivirus replication protein of TGMV
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                                                                                                                                                                                                                                                                                                                    PAIVLCNPGEGASYKEFLDKAENTGLKNWTIKNAIFITLTAPLYQESTQASQ 352
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                                                                                                                                                                                                                                                                                                                                                                                                                           VPPFPLSSFINVPVVMQEWVDDYFGRGSAARPERPISIIVEGDSRTGKTMWARALGPHNY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RSARGGQQSANDSYAKALNADSIESALTILKEEQPKDYVLQHHNIRSNLERIFVKVPEPW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MPPPQRFRVQSKNYFLTYPRCPIPKEEVLSQLQKIHTATNKKFIKVCEERHENGEPHLHA
                                                                                                                                                                                                                                                                                                                                                       LSGHLDFNSRVYSNAVEYNVIRDISPNYLKLKHWKELIGAQKDWQSNCKYGKPVQIKGGI
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                                                                                                                       (first entry)
                                                                                                                                                                                             peptide;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   132pp; English
                                    resistance;
                                                 protein; Rep protein; AL1; transgenic plant;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             31;
                                                                                                                                                                                               356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 1564; DB 2;
Pred. No. 5.7e-137;
1; Mismatches 39;
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                                  geminivirus
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                                      infection
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Matches 265;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      The present sequence represents a geminivirus replication (Rep) protein, which is also known as AL1. AL1 binds double-stranded DNA, cattalyses cleavage and ligation of single-stranded DNA, and interacts with other viral and host proteins. Mutants of the AL1 protein are used to produce transgenic plants. The mutantion in AL1 is present in a ribosome binding region, and expression of mutant AL1 protein imparts increased resistance to geminivirus infection in the plant. Mutant AL1 proteins are useful for producing plants having increased resistance or reduced sensitivity to a geminivirus such as tomato golden mosaic virus, tomato mottle virus, comato yellow mosaic virus, bean golden mosaic virus, potato yellow mosaic virus, bean golden mosaic virus, bean dwarf mosaic virus, squash leaf curl virus, trus, Texas pepper virus, cotton leaf curl virus or beet curly top virus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Transgenic plants with increased resistance to geminivirus infection comprise a nucleic acid construct containing a nucleic acid sequence encoding a mutant ALI protein with a mutation in the Rb binding regions.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 356 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Disclosure; Page 47-48; 73pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI; 2000-618851/59.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Hanley-Bowdoin L, Orozco BM,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   18-MAR-1999;
09-APR-1999;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local Similarity
                                 301
                                                                   241
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301
                                                                                                                                                                                                                                                  121 RSARGGQQSANDSYAKALNAGSVQSALAVLREEQPKDFVLQNHNIRSNLERIFAKAPEPW
                                                                                                                                                                                                                                                                                       61
                                                                                                                                                                                                                                                                                                            61 LVQFEGKYQCTNNRFFDLVSPTRSAHFHPNIQGAKSSSDVKSYIDKDGDTIEWGDFQIDG
                                                                                                                                                                                                                                                                                                                                                                              1 MPSHPRFQINAKNYFLTYPQCSLSKEESLSQLQALNTPINKKFIKICRELHEDGQPHLHV
                    PAIVLCNPGEGASYKEFLDKAENTGLKNWTIKNAIFITLTAPLYQESTQASQETGN 356
                                                                                        LSGHLDFNGRVESNDVQYNVIDDIAPHYLKLKHWKELLGAQKDWQSNCKYGKPVQIKGGI
                                                                                                                                            LPPFHVSSFTNVPDEMRQWAENYFGKSSAARPERPISIIIEGDSRTGKTMWARSLGPHNY
                                                                                                                                                             VPPFQVSSFTNVPDEMQEWADNYFGTGDAAPPDRPVSIIVEGDSRTGKTWWARALGPHNY
                                                                                                                                                                                                              RSARGGCQTSNDAAAEALNASSKEEALQIIREKIPEKYLFQFHNLNSNLDRIFDKTPEPW
                                                                                                                                                                                                                                                                                       LIQFEGKYCCONORFFDLVSPTRSAHPHPNIQRAKSSSDVKTYIDKDGDTLVWGEFQVDG
PSIVLCNPGEGASYKVFLDKEENTPLKNWTFHNAKFVFLNSPLYQSSTQSSNNXNS
                                                                     LSGHLDLNSRVYSNKVEYNVIDDVTPQYLKLKHWKELIGAQRDWQTNCKYGKPVQIKGGI
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99US-00289346
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note= "unspecified
                                                                                                                                                                                                                                                                                                                                                                                                                                77.3%; Score 1499; DB 3; 74.4%; Pred. No. 6.8e-131; ative 45; Mismatches 46;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Kong
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   amino
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 356;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                modification; mutation; viral replication; deficient; inhibition; viral resistance; geminivirus; tomato yellow leaf curl virus; Sardinian isolate; STYLCV; transgenic plant; P-loop; Cl protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Prodn. of virus-resistant transgenic plants - sequence from phytopathogenic DNA virus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Disclosure; Fig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gronenborn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               15-SEP-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Tomato yellow leaf curl virus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Nucleotide triphosphate binding site; DNA helicase; RNA helicase;
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DB; AAT12906.
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VPPFQVSSFTNVPDEMQEW-ADNYFGTGDAAPPDRPVSIIVEGDSRTGKTMWARALGPHN
                                                                                                                 RSARGGQQSANDSYAKALNAGSVQSALAVLREEQPKDFVLQNHNIRSNLERIFAKAPEPW
                                                                                                                                                                            LIQFEGKYNCTNQRFFDLVSPTRSAHFHPNIQGAKSSSDVKSYIDKDGDVLEWGTFQIDG
                                                                                                                                                                                                         LVQFEGKYQCTNNRFFDLVSPTRSAHFHFNIQGAKSSSDVKSYIDKDGDTIEWGDFQIDG
                                                                                                                                                                                                                                                                       MPRSGRFSIKAKNYFLTYPKCDLTKENALSQITNLQTPTNKLFIKICRELHENGEPHLHI
                                                                                                                                                                                                                                                                                                           MPPPKKFRVQSKNYFLTYPQCSLSKEBALSQLQNLNTPVNKKFIKICRELHENGEPHLHV
                                                                             RSARGGQQTANDAYAKAINAGSKSQALDVIKELAPRDYVLHFHNINSNLDKVFQVPPAPY
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(first entry)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note= "wild-type Lys has been replaced by Arg"
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                                                                                                                                                                                                                                                                                                                                                                                                     67.5%;
                                                                                                                                                                                                                                                                                                                                                                              49;
                                                                                                                                                                                                                                                                                                                                                                                                   Score 1308.5; DB 2
Pred. No. 4.2e-113;
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                                                       Mutation of consensus amino acids in the NTP-binding site of geminivirus Rep protein is used to produce replication deficient viruses. The mutated viral nucleic acid is used for producing transgenic plants that are resistant to, or tolerant of, the native virus. The present sequence is a mutant form of the Rep (or Cl) protein from the Sardinian isolate of tomato yellow leaf curl virus (STYLCV) in which the wild-type Lys227 residue has been changed to a His residue; transgenic Nicotiana benthamiana plante generated by transformation with the mutated virus were not resistant to STYLCV. In contrast, plants transformed with a virus in which Lys227 had been replaced by Ala were found to be resistant. (Updated on 27-AUG-2003 to correct OS field.)
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     Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Prodn. of virus-resistant transgenic plants - sequence from phytopathogenic DNA virus.
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N-PSDB; AAT12905.
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07-NOV-1996
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Nucleotide triphosphate binding site; DNA helicase; RNA helicase; modification; mutation; viral replication; deficient; inhibition; viral resistance; geminivirus; tomato yellow leaf curl virus; Sardinian isolate; STYLCV; transgenic plant; P-loop; C1 protein; AL1 protein; dominant negative phenotype.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sardinian tomato yellow leaf curl virus mutated Rep protein (K227A).
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07-NOV-1996
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                      Prodn. of virus-resistant transgenic plants - sequence from phytopathogenic DNA virus.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MPPPKKFRVQSKNYFLTYPQCSLSKEBALSQLQNLNTPVNKKFIKICHBLHENGBPHLHV
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              IPAIVLCNPGEGASYKEFLDKAENTGLKNWTIKNAIFITLTAPLY----QESTQASQETG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RSARGGOOTANDAYAKAINAGSKSQALDVIKELAPRDYVLHFHNINSNLDKVFQVPPAPY
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              YLCGHLDLSQKVYSNNAWYNVIDDVDPHY -- LKHFKEFMGAQRDWQSNTKYGKPIQIKGG
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VSPFLSSSFDQVPDELEHWVSENVMDA--AARPWRPVSIVIEGDSRTGATTWARSLGPHN
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(first en
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                                                                                                                                                                                                                                                               curl virus; strain Israel
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                                                                                                                                                                                                                                                                                                                                                  gene; transdominant mutation; transgenic plant;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 2;
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16-APR-1996; 15-APR-1997; 23-OCT-1997

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match 66.7
Best Local Similarity 66.3
Matches 238; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         This protein comprises the wild-type C1 protein of tomato yellow leaf curl virus (TYLCV), a geminivirus that has a monopartite genome. The C1 protein is required for replication. The invention involves production of transgenic plants containing DNA comprising geminivirus AC1 or C1 wild-type or mutant sequences that negatively interfere in trans with geminiviral replication during infection. Such transgenic plants are resistant to viral infection. The AC1/C1 genes are especially from TYLCV, tomato mottle virus or bean golden mosaic geminivirus (see AAT93282-93) and encode polypeptides (see AAW34324-35) that can have mutations in the highly conserved DNA-nicking domain and/or the NTP-binding domain. (Updated on 17-OCT-2003 to standardise OS field)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Transgenic plants expressing geminivirus AC1 and C1 wild-type and mutant genes - have increased resistance to geminivirus infection e.g. tomato motile virus, tomato yellow leaf curl virus or bean golden mosaic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 1997-526447/48.
N-PSDB; AAT93311.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     geminivirus.
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                                        303
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                                                                                                                                                                                                                                                                  124 RGGQQSANDSYAKALNAGSVQSALAVLREEQPKDFVLQNHNIRSNLERIFAKAPEPWVPP 183
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                                      IVLCNPGEGASYKEFLDKAENTGLKNWTIKNAIFITLTAPLY----QESTQASQETGNQ 357
                                                                                                   GHLDFNGRVFSNDVQYNVIDDIAPHYLKLKHWKELLGAQKDWQSNCKYGKPVQIKGGIPA 302
                                                                                                                                                                                        FQVSSFTNVPDEMQEW-ADNYFGTGDAAPPDRPVSIIVEGDSRTGKTMWARALGPHNYLS 242
                                                                                                                                                                                                                                                                                                                          FEGKYQCKNQRFFDLVSPNRSAHFHPNIQAAKSSTDVKTYVEKDGNFIDFGVSQIDGRSA 121
                                                                                                                                                                                                                                                                                                                                                 FEGKYQCTNNRFFDLVSPTRSAHFHPNIQGAKSSSDVKSYIDKDGDTIEWGDFQIDGRSA 123
                                                                                                                                                                                                                                                                                                                                                                                                                                            PKKFRVQSKNYFLTYPQCSLSKBEALSQLQNLNTPVNKKFIKICRELHENGEPHLHVLVQ 63
                                                                                GHLDLSPKVYSNDAWYNVIDDVNPHY--LKHFKEFIWAQRDWQSNTKYGKPIQIKGGIPT 297
                                                                                                                                                               FLSSSFNQVPDELEEWVAENV--VYSAARPWRPISIVIEGDSRTGKTMWARSLGPHNYLC 239
                                                                                                                                                                                                                                               RGGQQSANDAYAEALNSGSISEALNILKEKAPKDYILQFHNLSSNLDRIFSPPLEVYVSP 181
                                                                                                                                                                                                                                                                                                                                                                                                          PRIFKIYAKNYFLTYPNCSLSKEEALSQLKKLETPTNKKYIKVCKELHENGEPHLHVLIQ 61
IFLCNPGPTSSYREYLDEEKNISLKNWALKNATFVTLYEPLFASINQGPTQDSQEETNK 356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         66.7%; Score 1293.5; DB 2; 66.3%; Pred. No. 1e-111; tive 53; Mismatches 59;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Maxwell DP,
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Search completed: December Job time : 159 secs Ψ 2004, 14:57:29

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Result
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Maximum DB
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     Pred. No.
                                                                                                                                                                                                                          1311.5
1308.5
1305.5
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275.5
241
141
141
113
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re greater than or equal to the score of the result being printed,
is derived by analysis of the total score distribution.
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seq length: 2000000000
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1939
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1: /cgn2_6/ptodata/:
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67
67
66
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Copyright (c) 1993 - 2004 Compugen Ltd.
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/cgn2_6/ptodata/1/iaa/5B_COMB.pep:*
/cgn2_6/ptodata/1/iaa/6A_COMB.pep:*
/cgn2_6/ptodata/1/iaa/6B_COMB.pep:*
/cgn2_6/ptodata/1/iaa/PCTUS_COMB.pep:*
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US-08-838-151A-2
US-08-838-151A-4
US-08-838-151A-4
US-08-838-151A-4
US-08-838-151A-5
US-08-838-151A-5
US-08-838-151A-5
US-08-838-151A-5
US-08-838-151A-5
US-08-809-103B-8
US-08-809-103B-8
US-08-809-103B-8
US-08-809-103B-4
US-08-838-151A-2
US-08-838-151A-2
US-08-838-151A-2
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US-09-414-276-3
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US-09-414-276-3
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US-08-811-949-63
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1088.218 Million cell updates/sec
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Sequence 6, Appli
Sequence 4, Appli
Sequence 4, Appli
Sequence 44, Appl
Sequence 46, Appl
Sequence 49, Appl
Sequence 52, Appl
Sequence 55, Appl
Sequence 6, Appli
Sequence 8, Appli
Sequence 6, Appli
Sequence 20, Appl
Sequence 27, Appl
Sequence 30, Appl
Sequence 30, Appl
Sequence 6, Appli
Sequence 3, Appli
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Sequence 4, Appli
Sequence 4, Appli
Sequence 5, Appli
Sequence 63, Appli
Sequence 63, Appli
Sequence 63, Appli
Sequence 67, Appli
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ALIGNMENTS

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; Sequence 2, Application US/08838151A ; Patent No. 6291743
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US-08-838-151A-2
                                                                                 US-08-838-151A-2
  Matches 355;
                   Query Match
Best Local &
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GENERAL INFORMATION:
                                                                                                                                                                                                                                             CLASSIFICATION: 800
ATTORNEY/AGENT INFORMATION:
NAME: Mueller, Lisa V
REGISTRATION NUMBER: 38,978
REFERENCE/DOCKET NUMBER: SV83
TELECOMMUNICATION INFORMATION:
TELEPHONE: 312-616-5400
                                                                                                                                                                                                        TELEPHONE: 312-616-5400
TELEFAX: 312-616-5460
INFORMATION FOR SEQ ID NO: 2:
                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION NUMBER: US/08/838,151A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: Stout, John T
APPLICANT: Luu, Hang T
APPLICANT: Maxwell, Douglas
APPLICANT: Maxwell, Douglas
APPLICANT: Hanson, Steve
TITLE OF INVENTION: Transgenic Plants Expressing Geminivirus
TITLE OF INVENTION: Genes
                                                                                                   LENGTH: 361 amino acids
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: protein
                                                                                                                                                             SEQUENCE CHARACTERISTICS:
LENGTH: 361 amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NUMBER OF SEQUENCES: 6
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STATE: I
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 60601
                     Similarity
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Two Prudential Plaza, Suite 4700
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98.4%; Score 1908; DB 3; 98.3%; Pred. No. 2.5e-189; tive 3; Mismatches 3;
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                                                                                                                                                                                                                                                                                            SVS3801P0260
                                        Length 361;
    Indels
    0,
    Gaps
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1 MPPPKKFRVQSKNYFLTYPQCSLSKEEALSQLQNLNTPVNKKFIKICRELHENGEPHLHV

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US-08-038-151A-6

; Sequence 6, Application US/08838151A

; Patent No. 6291743
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                                                 US-08-838-151A-6
                                                                                        TELEFAX: 312-616-7...
INFORMATION FOR SEQ ID NO: 6
SEQUENCE CHARACTERISTICS:
LENGTH: 361 amino acids
Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GENERAL INFORMATION:
                                                                                                                                                        ATTORNEY/AGENT INFORMATION:

NAME: Mueller, Lisa V
REGISTRATION NUMBER: 38,978
REFERENCE/DOCKET NUMBER: SVS3
TELECOMMUNICATION INFORMATION:
TELEPHONE: 312-616-5400
TELEPAX: 312-616-5460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                   COMPUTER: IBM PC Compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/838,151A
                                                               TOPOLOGY: 1: MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                               COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NUMBER OF SEQUENCES: 63
CORRESPONDENCE ADDRESS:
ADDRESSEE: Dressler, Rockey, Milnamow & Katz
STREET: Two Prudential Plaza, Suite 4700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Stout, John T
APPLICANT: Luu, Hang T
APPLICANT: Maxwell, Douglas
APPLICANT: Maxwell, Douglas
APPLICANT: Ahlquist, Paul
APPLICANT: Hanson, Steve
TITLE OF INVENTION: Transgenic Plants Expressing Geminivirus
TITLE OF INVENTION: Genes
                                                                                                                                                                                                                                                                      FILING DATE:
CLASSIFICATION: 800
                                                                                                                                                                                                                                                                                                                                                                                                                              COUNTRY: U.S.A.
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                                                                                                             361 amino acids
                                                              protein
   98.1%;
98.1%;
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   Pred. No. 1e-188;
              Length
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APPLICANT: Stout,
APPLICANT: Luu, Ha
   MOLECULE TYPE:
                                                                                                                                                                                                                           FILING DATE:
                                                                                                                                                                                                                                                                                                                                                     COUNTRY: U
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                                                                                                            TELEPHONE:
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 protein
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Sequence 8, Application US/08838151A
                                       TELEFAX: 312-616-5460
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 361 amino acids
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APPLICANT: Luu, Hang T
APPLICANT: Maxwell, Douglas
APPLICANT: Hanson, Steve
TITLE OF INVENTION: Transgenic Plants Expressing Geminivirus
TITLE OF INVENTION: Genes
NUMBER OF SEQUENCES: 63
CORRESPONDENCES: Dressler, Rockey, Milnamow & Katz
STREET: Two Prudential Plaza, Suite 4700
                                                                                                                                                                                                                                                                                                            ZIP: 60601
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/838,151A
                                                                                                                                                       NAME: Mueller, Lisa V
REGISTRATION NUMBER: 38,978
REFERENCE/DOCKET NUMBER: SVI
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                           CLASSIFICATION: 800
ATTORNEY/AGENT INFORMATION:
TYPE: amino acid
TOPOLOGY: linear
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                                                                                                                                       312-616-5400
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RESULT 4
US-08-838-151A-4
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Best Local
                                                                                                                          COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PATENTIN Release #1.0, Veri
CURRENT APPLICATION DATA:
APPLICATION UMBER: US/08/838,151A
FILING DATE:
CLASSIFICATION: 800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GENERAL INFORMATION:
             TELEFAX: 312-616-5460 INFORMATION FOR SEQ ID NO:
                                      ATTORNEY AGENT INFORMATION:

NAME: Mueller, Lisa V
REGISTRATION NUMBER: 38,978
REFERENCE/DOCKET NUMBER: SVS3
TELECOMMUNICATION INFORMATION:
TELEPHONE: 312-616-5400
                                                                                                                                                                                                                                                                                                                 CORRESPONDENCE ADDRESS:
ADDRESSEE: Dressler, Rockey, Milnamow & Katz
STREET: Two Prudential Plaza, Suite 4700
                                                                                                                                                                                                                                 COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                TITLE OF INVENTION: Trans.
TITLE OF INVENTION: Genes
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT:
                                                                                                                                                                                                                                                              COUNTRY: U
                                                                                                                                                                                                                                                                                          CITY: Chicago
STATE: Illinois
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Maxwell, Douglas
Ahlquist, Paul
Hanson, Steve
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Luu, Hang T
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                                                                       SVS3801P0260
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Pred. No. 1.1e-187;
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                                                                                                                                                                                        Version
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Best Local Similarity
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         APPLICATION NUMBER: US/08/838
FILING DATE:
CLASSIFICATION: 800
ATTORNEY/AGENT INFORMATION:
NAME: Mueller, Lisa V
REGISTRATION NUMBER: 38,978
REFERENCE/DOCKET NUMBER: SVS3
                                                                                                                                                                                                                                                                                                                                                                                                                             GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                  APPLICANT:
                                                                                                               ZIP: 60601
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: FLOPPY DOS/MS-DOS
SOSTWARE: PATENTIA Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                        APPLICANT: Hanson, Steve TITLE OF INVENTION: Trans; TITLE OF INVENTION: Genes NUMBER OF SEQUENCES: 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TOPOLOGY: linear MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                           NUMBER OF SEQUENCES: 6
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TELECOMMUNICATION INFORMATION
                                                                                                                                                                                                                             STREET: Two Prud
CITY: Chicago
STATE: Illinois
                                                                                                                                                                                                                  COUNTRY: U.S.A.
                                                                                                                                                                                                                                                                              ADDRESSEE: Dressler,
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Maxwell, Douglas
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Hang T
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                                                                                                   US/08/838,151A
                                                                                                                                                                                                                                                                           Rockey, Milnamow & Katz
             SVS3801P0260
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181 VPPPQVSSFTNVPDEMQEWADNYFGTGDAAPPDRPVSIIVEGDSRTGKTMWARALGPHNY
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PAIVLCNPGEGASYKEFLDKAENTGLKNWTVKNAIFITLTAPLYQDSTQASQETGNQKAQ
                           PAIVLCNPGEGASYKEFLDKAENTGLKNWTIKNAIFITLTAPLYQESTQASQETGNQKAQ
                                                                                            LSGHLDFNGRVFSNDVQYNVIKYIAPHYLKLKHWKELLGAQKDWQSNCKYGKPVQIKGGI
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Pred. No. 4.7e-187;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Patent No. 6291743
GENERAL INFORMATION:
APPLICANT: Stout,
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Best Local Similarity
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INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 353 amino acid
                                                                                                                                                                                                                                                                                                   CORRESPONDENCE ADDRESS:
ADDRESSEE: Dressler, Rockey, Milnamow & Katz
STREET: Two Prudential Plaza, Suite 4700
              ATTORNEY/AGENT INFORMATION:
NAME: Mueller, Lisa V
REGISTRATION NUMBER: 38,978
REFERENCE/DOCKET NUMBER: SV
                                                                                                                                   COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0,
CURRENT APPLICATION DATA:
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                                                                                                                                                                                                    COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                             TITLE OF INVENTION: Transgenic TITLE OF INVENTION: Genes NUMBER OF SEQUENCES: 63
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TELECOMMUNICATION INFORMATION:
                                                                                APPLICATION NUMBER: FILING DATE: CLASSIFICATION: 800
                                                                                                                                                                                                                                                           COUNTRY:
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6291743
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Luu, Hang T
Maxwell, Douglas
Ahlquist, Paul
Hanson, Steve
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312-616-5460
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80.4%; Pred. No. 1.8e-154;
tive 31; Mismatches 38; Indels
                                                                                                                   US/08/838,151A
                SVS3801P0260
                                                                                                                                                                                                                                                                                                                                                                                           Plants Expressing Geminivirus
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APPLICANT: Stout,
                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
                                                                                                                                                                                                                                                                                                                                                         APPLICAN: Transy TITLE OF INVENTION: Genes TITLE OF INVENTION: Genes 63
                ATTORNEY/AGENT INFORMATION:
NAME: Mueller, Lisa V
REGISTRATION NUMBER: 38,978
REFERENCE/DOCKET NUMBER: SV
                                                                                                                                    COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTMARE: PatentIn Release #1.0,
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                             ADDRESSEE: Dressler,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT:
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TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LENGTH: 353 amino acids
TYPE: amino acid
TOPOLOGY: linear
                                                                                FILING DATE:
CLASSIFICATION: 800
                                                                                                                                                                                                                                                                         CITY: Chicago
STATE: Illinois
                                                                                                                                                                                                                                                                                                         STREET:
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                                                                                                                    APPLICATION NUMBER:
                                                                                                                                                                                                                                                         COUNTRY:
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                                                                                                                                                                                                                                                                                                           E: Dressler, Rockey, Milnamow & Katz
Two Prudential Plaza, Suite 4700
                                                                                                                                                                                                                                                                                                                                                                                                                                              Stout, John T
Luu, Hang T
Maxwell, Douglas
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Hanson, Steve
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80.4%; Pred. No. 1.8e-154;
tive 31; Mismatches 38;
                                                                                                                                                                                                                                                                                                                                                                                               Transgenic Plants Expressing Geminivirus
                                                                                                                    US/08/838,151A
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                 SVS3801P0260
                                                                                                                                                        Version #1
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INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
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APPLICANT:
APPLICANT:
                                                                                                                               COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
ATTORNEY/AGENT INFORMATION:
NAME: MUELLER, Lisa V
REGISTRATION NUMBER: 38,978
REFERENCE/DOCKET NUMBER: SV
                                                                                                                                                                                                                                                                                                                     CORRESPONDENCE ADDRESS:
ADDRESSEE: Dressler, Rockey, Milnamow & Katz
STREET: Two Prudential Plaza, Suite 4700
                                                                                                                                                                                                                                                                                                                                                                        TITLE OF INVENTION: Transgenic Plants Expressing Geminivirus TITLE OF INVENTION: Genes
NUMBER OF SEQUENCES: 63
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                                                                            FILING DATE:
CLASSIFICATION:
                                                                                                                                                                                                                                                              COUNTRY:
                                                                                                                                                                                                                                                                                  CITY: Chicago
STATE: Illinois
                                                                                                               APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TOPOLOGY:
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                                                                                                                                                                                                                                                                                                                                                                                                                               : Stout, John T
: Luu, Hang T
: Maxwell, Douglas
: Ahlquist, Paul
: Ahlanson, Steve
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                                                                                                               US/08/838,151A
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   SVS3801P0260
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                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Luu, Hang T
APPLICANT: Maxwell, Douglas
APPLICANT: Ahlquist, Paul
APPLICANT: Hanson, Steve
TITLE OF INVENTION: Transge
                                                                                                                     COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM FC COMPATION SYSTEM: PC PDOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version
CURRENT APPLICATION DATA:
ATTORNEY/AGENT INFORMATION:
NAME: MUELler, Lisa V
REGISTRATION NUMBER: 38,978
REFERENCE/DOCKET NUMBER: SV
                                                                                                                                                                                                                                                                                                                            NUMBER OF SEQUENCES: 6
CORRESPONDENCE ADDRESS:
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                                                                      CLASSIFICATION:
                                                                                                       APPLICATION NUMBER:
                                                                                                                                                                                                                          ZIP: 60601
                                                                                                                                                                                                                                                             CITY: Chicago
STATE: Illino
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                                                                                                                                                                                                                                           COUNTRY:
                                                                                                                                                                                                                                                                                                                ADDRESSEE:
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o. 6291743
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Two Prudential Plaza, Suite 4700
                                                                                                                                                                                                                                             U.S.A.
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Maxwell, Douglas
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80.1%; Pred. No. 7.6e-154;
ative 31; Mismatches 39;
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GENERAL INFORMATION:
APPLICANT: GRONENBORN, Bruno
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
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           APPLICATION NUMBER: FR 94.11040
FILING DATE: 15-SEP-1994
PROOR APPLICATION DATA:
APPLICATION NUMBER: WO PCT/FR95/0
FILING DATE: 15-SEP-195
ATTORNEY_AGENT INFORMATION:
NAME: PATCH, Andrew J
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TELEFAX: 312-616-5460
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                ZIP: 4444

COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk

COMPUTER: IBM PC compatible

OPERATING SYSTEM: PC-DOS/MS-DOS

SOFTWARE: Patentin Release #1.0, Version #1.30

CURRENT APPLICATION DATA:

CURRENT APPLICATION DATA:

CURRENT APPLICATION NUMBER: US/08/809,103B
                                                                                                                                           CLASSIFICATION: 800 PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE OF INVENTION: PHYTOPATHOGENIC DNA VIRUS RESISTANT TITLE OF INVENTION: TRANSGENIC PLANTS AND SEEDS AND MET
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LENGTH: 353 amino acids
TYPE: amino acid
TOPOLOGY: linear
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  / Match 80.7%; Score 1564; DB 3;
Local Similarity 80.1%; Pred. No. 1.2e-153;
les 282; Conservative 31; Mismatches 39;
REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                            CITY: Arlington
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                                                                      WO PCT/FR95/01192
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                                                                                                                                                                                                                                                                                                              Sequence 8, Application US/08809103B
Patent No. 6133505
GENERAL INFORMATION:
APPLICANT: GRONENBORN, Bruno
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match 67.6%;
Best Local Similarity 66.3%;
Matches 240; Conservative 4
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INFORMATION FOR SEQ ID NO:
                                       COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION UNMBER: US/08/809,103B
FILING DATE: 17-MAR-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE/DOCKET NUMBER: US
TELECOMUNICATION INFORMATION:
TELEPHONE: (703) 521-2297
TELEPAX: (703) 685-0573
            CLASSIFICATION: 800 PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                   TITLE OF INVENTION:
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LENGTH: 359 amino acid
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                                                                                                                                                                                                                                                                       NUMBER OF SEQUENCES:
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TOPOLOGY: linear
APPLICATION NUMBER:
                                                                                                                                                                          COUNTRY:
                                                                                                                                                                                           STATE:
                                                                                                                                                                                                         CITY: Arlington
                                                                                                                                                                                                                                       ADDRESSEE:
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Y: U.S.A.
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FR 94.11040
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; Pred. No. 2.1e-127;
48; Mismatches 65;
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RESULT 12
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                                                                                                                                                                                                                                                                                      Sequence 4, Application US/08809103B Patent No. 6133505
GENERAL INFORMATION:
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TELEPAX: (703) 685-0573
TELEX: 248425 EMBON
INFORMATION FOR SEQ ID NO: 8:
SEQUENCE CHARACTERISTICS:
LENGTH: 359 amino acids
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Best Local Similarity 66.0%;
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                                      COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                    NUMBER OF SEQUENCES: 17
CORRESPONDENCE ADDRESS:
ADDRESSEE: YOUNG & THOMPSON
STREET: 745 South 23rd Street
                                                                                                                                                                                                                             APPLICANT: GRONENBORN, Bruno
TITLE OF INVENTION: TRANSGENIC PLANTS AND SEEDS AND METHODS FOR OBTAINING SAME
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REGISTRATION NUMBER: 32,925
REFERENCE/DOCKET NUMBER: USI
TELECOMMUNICATION INFORMATION:
TELEPHONE: (703) 521-2297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FILING DATE: 15-SEP-
PRIOR APPLICATION DATA:
APPLICATION NUMBER:
FILING DATE: 15-SEP-
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                                                                                           STREET: 745 South CITY: Arlington STATE: Virginia COUNTRY: U.S.A.
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
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TYPE: amino acid
TOPOLOGY: linear
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APPLICANT: GRONENBORN, TITLE OF INVENTION: PH NUMBER OF SEQUENCES: 1
CORRESPONDENCE ADDRESS:

TRANSGENIC PLANTS AND SEEDS AND METHODS FOR OBTAINING SAME

RN, Bruno
PHYTOPATHOGENIC DNA VIRUS RESISTANT

ADDRESSEE: STREET: 74: CITY: Arli:

745 South 23rd Street

YOUNG & THOMPSON

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US-08-809-103B-6
; Sequence 6, Application US/08809103B
; Patent No. 6133505
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Best Local Similarity
GENERAL INFORMATION:
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INFORMATION FOR SEQ ID NO:
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PRIOR APPLICATION NUMBER: FR 94.11040

FILING DATE: 15-8EP-1994
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TELEFAX: (703) 685-0573
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3.6e-127;
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RESULT 14
US-08-838-151A-20
; Sequence 20, Application US/08838151A
; Patent No. 6291743
; GENERAL INFORMATION:
; APPLICANT: Stout, John T
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APPLICATION NUMBER: FR 94.11040
FILING DATE: 15-SEP-1994
PRIOR APPLICATION DATA:
APPLICATION NUMBER: WO PCT/FR95/01192
FILING DATE: 15-SEP-1995
ATTORNEY/AGENT INFORMATION:
NAME: PATCH, Anderew J.
REGISTRATION NUMBER: 32,925
REGISTRATION NUMBER: USB94AL CNR TON
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
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TELEX: 248425 EMBON
INFORMATION FOR SEQ ID NO: 6:
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LENGTH: 359 amino acid
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APPLICATION UMBER: US/08/809,103B
FILING DATE: 17-MAR-1997
CLASSIFICATION: 800
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MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-
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TELEFAX: (703) 685-0573
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RESULT 15
US-08-838-151A-24
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Best Local Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version
CURRENT APPLICATION DATA:
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COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TELECOMMUNICATION INFORMATION: TELEPHONE: 312-616-5400
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ATTORNEY/AGENT INFORMATION:
NAME: Mucller, Lisa V
REGISTRATION NUMBER: 38,978
REFERENCE/DOCKET NUMBER: SV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: Hanson, Steve TITLE OF INVENTION: Transgenic Plants Expressing TITLE OF INVENTION: Genes
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CORRESPONDENCE ADDRESS:
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CITY: Chicago
STATE: Illinois
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                                                                                          IVLCNPGEGASYKEFLDKAENTGLKNWTIKNAIFITLTAPLY----QESTQASQETGNQ 357
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                                                                                                                                                                GHLDFNGRVFSNDVQYNVIDDIAPHYLKLKHWKELLGAQKDWQSNCKYGKPVQIKGGIPA 302
                                                                                                                                                                                                                                                                                RGGQQSANDAYAEALNSGSISEALNILKEKAPKDYILQFHNLSSNLDRIFSPPLEVYVSP
                                                                                                                                                                                                                                                                                                                                                                                                                      IFLCNPGPTSSYREYLDEEKNISLKNWALKNATFYTLYEPLFASINGGPTQDSQEETNK 356
                                                                                                                                           GHLDLSPKVYSNDAWYNVIDDVNPHY--LKHFKEFIWAQRDWQSNTKYGKPIQIKGGIPT
                                                                                                                                                                                                             FLSSSFNQVPDELEEWVAENV--VYSAARPWRPISIVIEGDSRTGKTMWARSLGPHNYLC
                                                                                                                                                                                                                                              FQVSSFTNVPDEMQEW-ADNYFGTGDAAPPDRPVSIIVEGDSRTGKTMWARALGPHNYLS
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Two Prudential Plaza, Suite 4700
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Maxwell, Douglas
Ahlquist, Paul
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1.5e-125;
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Sequence 24, Application US/08838151A Patent No. 6291743
GENERAL INFORMATION:

APPLICANT:

Stout,

John

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; TOPOLOGY: linear ; MOLECULE TYPE: protein US-08-838-151A-24
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SEQUENCE CHARACTERISTICS:
LENGTH: 357 amino acids
TYPE: amino acid
TOPOLOGY: linear
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ZIP: 60601

COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION UMMBER: US/08/838,151A
FILING DATE:
CLASSIFICATION: 800
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APPLICANT: Maxwell, Douglas
APPLICANT: Ahlquist, Paul
APPLICANT: Hanson, Steve
TITLE OF INVENTION: Transgenic Plants Expressing Geminivirus
TITLE OF INVENTION: Genes
NUMBER OF SEQUENCES: 63
CORRESPONDENCE ADDRESS:
ADDRESSE: Dressler, Rockey, Milnamow & Katz
STREET: Two Prudential Plaza, Suite 4700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATTORNEY/AGENT INFORMATION:
NAME: Mueller, Lisa V
REGISTRATION NUMBER: 38,978
REFERENCE/DOCKET NUMBER: SVS3801P0260
TELECOMMUNICATION INFORMATION:
TELEPHONE: 312-616-5400
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CITY: Chicago
STATE: Illinois
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                           303 IVLCNPGEGASYKEFLDKAENTGLKNWTIKNAIFITLTAPLY----QESTQASQETGNQ 357
                                                                                   124 RGGQQSANDSYAKALNAGSVQSALAVLREEQPKDFVLQNHNIRSNLERIFAKAPEPWVPP 183
298
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                                                                                                                                                                             182 FLSSSFNQVPDELEEWVAENV--VYSÄARPWRPISIVIEGDSRTGKTMWARSLGPHNYLC 239
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Length 357;
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Search completed: December Job time : 24 secs

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Run
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Maximum DB
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length: 2000000000
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Copyright (c) 1993 - 2004 Compugen Ltd
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in2-6/ptodatca/2/pubpaa/USO7—NEW PUB.pep:*
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in2-6/ptodatca/2/pubpaa/PCTUS PUBCOMB.pep:*
in2-6/ptodatca/2/pubpaa/USO8 NEW PUB.
in2-6/ptodatca/2/pubpaa/USO8 NEW PUB.pep:*
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US-08-838-151A-49
US-08-838-151A-59
US-10-633-850-80
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                                       Sequence 2, Appli
Sequence 8, Appli
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Sequence 46, Appl
Sequence 46, Appl
Sequence 52, Appl
Sequence 55, Appl
Sequence 55, Appl
Sequence 80, Appl
Sequence 80, Appl
Sequence 80, Appl
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602	ω	e 6,	14,	Sequence 112, App	e 10	30,	27,	Sequence 24, Appl	Sequence 20, Appl	Sequence 70, Appl	6 24	72,		56,	66,	52,	74,	78,	62,	96,	68,	76,	98,		58,	e 90,	11,		92		

ALIGNMENTS

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US-08-838-151A-2
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                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Stout, John T
APPLICANT: Luu, Hang T
APPLICANT: Maxwell, Douglas
APPLICANT: Maxwell, Douglas
APPLICANT: Hanson, Steve
TITLE OF INVENTION: Transgenic Plants Expressing Geminivirus
TITLE OF INVENTION: Genes
NUMBER OF SEQUENCES: 63
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                            COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                        CLASSIFICATION: 800
ATTORNEY/AGENT INFORMATION:
NAME: Mueller, Lisa V
REGISTRATION NUMBER: 38,978
REFERENCE/DOCKET NUMBER: SV
  TELECOMMUNICATION INFORMATION: TELEPHONE: 312-616-5400
                                                                                                                                                                                                                                                                                                                                                                    STREET: Two Pr
CITY: Chicago
STATE: Illinoi
TELEPHONE:
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                                                                                                                                                                          APPLICATION NUMBER:
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Two Prudential Plaza, Suite 4700
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Sequence

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RESULT 2
US-08-838-151A-6
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Best Local Similarity 98.3
Matches 355; Conservative
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                                                                                                                                                                                                                                                                                                                        APPLICANT: Stout, John T
APPLICANT: Stout, John T
APPLICANT: Luu, Hang T
APPLICANT: Maxwell, Douglas
APPLICANT: Ahlquist, Paul
APPLICANT: Hanson, Steve
TITLE OF INVENTION: Transgen:
TITLE OF INVENTION: Genes
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                                                                                                                                                                                                                                                                                                                                                                                                                                                     GENERAL INFORMATION:
APPLICANT: Stout,
            APPLICATION NUMBER: US/01
PILING DATE:
PILING DATE:
CLASSIFICATION: 800
ATTORNEY/AGENT INFORMATION:
NAME: Mueller, Lisa V
                                                                                                   COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS SOTTWARE: Patentin Release #1.0, CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TOPOLOGY: linear MOLECULE TYPE: protein
                                                                                                                                                                      COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                         CORRESPONDENCE ADDRESS:
ADDRESSEE: Dressler, Rockey, Milnamow & Katz
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REGISTRATION NUMBER:
                                                                                                                                                                                                                        COUNTRY:
                                                                                                                                                                                                                                              STATE:
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                                                                                                                                                                                                                                                                             Two Prudential Plaza,
                                                                                                                                                                    Floppy disk
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                                                                                 US/08/838,151A
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                                                                                                                                                                                                                                                                              Suite 4700
                                                                                                                       Version
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                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 8, Application US/08838151A Publication No. US20010011379A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match 98.1%;
Best Local Similarity 98.1%;
Matches 354; Conservative
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                                                                                                                                                                                                                                                                                                                                APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                    APPLICANT:
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/838,151A
                                                                                                                                                                                                   APPLICANT: Hanson, Steve
TITLE OF INVENTION: Transgenic Plants Expressi:
TITLE OF INVENTION: Genes
NUMBER OF SEQUENCES: 63
CORRESSE: Dressler, Rockey, Milnamow & Katz
STREET: Two Prudential Plaza, Suite 4700
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TELECOMMUNICATION INFORMATION:
TELEPHONE: 312-616-5400
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LENGTH: 361 amino acic
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                                                                                                                               COUNTRY: U.S.A. ZIP: 60601
                                                                                                                                                                 CITY: Chicago
STATE: Illinois
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TOPOLOGY: linear
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Luu, Hang T
Maxwell, Douglas
Ahlquist, Paul
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Pred. No. 3.8e-162;
3; Mismatches 4;
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                                                                                                                                                                                                                                                                                                Geminivirus
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Sequence 4, Application US/08838151A

Publication No. US20010011379A1

GENERAL INFORMATION: John T

APPLICANT: Stout, John T

APPLICANT: Maxwell, Douglas

APPLICANT: Aniquist, Paul

APPLICANT: Hanson, Steve

TITLE OF INVENTION: Transgenic Plants Expressing Gen

TITLE OF INVENTION: Genes

NUMBER OF SEQUENCES: 63

CORRESPONDENCE ADDRESS:
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US-08-838-151A-4
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Best Local Similarity
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INFORMATION FOR SEQ ID NO: 8:
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ATTORNEY/AGENT INFORMATION:
NAME: Mueller, Lisa V
REGISTRATION NUMBER: 38,978
REFERENCE/DOCKET NUMBER: SV83
TELECOMMUNICATION INFORMATION:
TELEPHONE: 312-616-5400
ZIP: 60601
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
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LENGTH: 361 amino acid
                                                                                                       STREET: Two Pruc
CITY: Chicago
STATE: Illinois
                                                                                        COUNTRY:
                                                                                                                                                           ADDRESSEE:
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                                                                                                                                          E: Dressler, Rockey, Milnamow & Katz
Two Prudential Plaza, Suite 4700
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97.8%;
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INFORMATION FOR SEQ ID NO: 4:
SEQUENCE CHARACTERISTICS:
LENGTH: 361 amino acids
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                        Sequence 44, Application US/08838151A Publication No. US20010011379A1
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ATTORNEY/AGENT INFORMATION:
NAME: Mueller, Lisa V
REGISTRATION NUMBER: 38,978
REFERENCE/DOCKET NUMBER: SVS3
TELECOMMUNICATION INFORMATION:
TELEDHONE: 312-616-5400
                                                                                                                                                                                                                                                                       GENERAL INFORMATION:
                                                                                                                                     APPLICANT: Stout, John T
APPLICANT: Luu, Hang T
APPLICANT: Maxwell, Douglas
APPLICANT: Ahlquist, Paul
APPLICANT: Hanson, Steve
TITLE OF INVENTION: Transgenic Plants Expressing Geminivirus
TITLE OF INVENTION: Genes
                                                                                                         NUMBER OF SEQUENCES: 6
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SOFTWARE: PatentIn Release #1.0, Version #1.30 CURRENT APPLICATION DATA:
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STREET: Two Prude CITY: Chicago STATE: Illinois COUNTRY: U.S.A. ZIP: 60601
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                                                                                          ADDRESSEE: Dressler,
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                                                                       E: Dressler, Rockey, Milnamow & Katz
Two Prudential Plaza, Suite 4700
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97.5%;
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Pred. No. 1e-160;
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                                                                                                                                                                             GENERAL INFORMATION:
APPLICANT: Stout, John T
APPLICANT: Luu, Hang T
APPLICANT: Maxwell, Douglas
APPLICANT: Ahlquist, Paul
APPLICANT: Hanson, Steve
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity
Matches 283; Conserv
                                                                                                                                                                                                                                                                                                Sequence 46, Application US/08838151A Publication No. US20010011379A1
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                                                                    CORRESPONDENCE ADDRESS:
ADDRESSEE: Dressler, Rockey, Milnamow & Katz
STREET: Two Prudential Plaza, Suite 4700
                                                                                                                          TITLE OF INVENTION: Trans,
TITLE OF INVENTION: Genes
NUMBER OF SEQUENCES: 63
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NAME: Mueller, Lisa V
REGISTRATION NUMBER: 38,9
REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
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TYPE: amino acid
TOPOLOGY: linear
                                 CITY: Chicago
STATE: Illinois
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CLASSIFICATION:
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                 COUNTRY:
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Best Local Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TELEFAX: 312-616-5460 INFORMATION FOR SEQ ID NO: 46:
                                                                                   APPLICANT: Luu, Hang T
APPLICANT: Maxwell, Douglas
APPLICANT: Ahlquist, Paul
APPLICANT: Hanson, Steve
TITLE OF INVENTION: Transgenic Plants Expressing Geminivirus
TITLE OF INVENTION: Genes
NUMBER OF SEQUENCES: 63
CORRESPONDENCE ADDRESS:
ADDRESSEE: Dressler, Rockey, Milnamow & Katz
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LENGTH: 353 amino acids
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: protein
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NAME: Mueller, Lisa V
REGISTRATION NUMBER: 38,978
REFERENCE/DOCKET NUMBER: SV4
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                                 CITY: Chicago
STATE: Illinois
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CLASSIFICATION:
                 COUNTRY:
                                                                      STREET:
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60601
                                                                      E: Dressler, Rockey, Milnamow & Katz
Two Prudential Plaza, Suite 4700
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                                                                                                                                                                                                                                                             Stout, John T
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180 180

300

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COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM FOC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                                                                                                                                                                                           241 LSGHLDFNGRVFSNDVQYNVIDDIAPHYLKLKHWKELLGAQKDWQSNCKYGKPVQIKGGI
                                                                                                                                                                                                                                                                                                                                                 181 VPPFQVSSFTNVPDEMQEWADNYFGTGDAAPPDRPVSIIVEGDSRTGKTMWARALGPHNY
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                                    PAIVLCNPGEGASYKEFLDKAENTGLKNWTIKNAIFITLTAPLYQESTQASQ 352
                                                                                                                                      LSGHLDFNSRYYSNAVEYNVIDDISPNYLKLKHWKELIGAQKDWQSNCKYGKPVQIKGGI
PSIVLCNPGEGSSYKDFLDKEENRALHNWTIHNAIFVTLTAPLYQSTTQDCQ
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80.4%; Pred. No. 1.7e-132;
ative 31; Mismatches 38;
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                                                                                                                                                                                                                                                                                                Sequence 52, Application US/08838151A Publication No. US20010011379A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CLASSIFICATION: 800
ATTORNEY/AGENT INFORMATION:
NAME: Mueller, Lisa V
REGISTRATION NUMBER: 38,978
REFERENCE/DOCKET NUMBER: SVS3
TELECOMMUNICATION INFORMATION:
TELEPHONE: 312-616-5400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             INFORMATION FOR SEQ ID NO: 49: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                              APPLICANT: Stout,
APPLICANT: Luu, Ha
APPLICANT: Maxwell
APPLICANT: Ahlquis
APPLICANT: Hanson,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TOPOLOGY: linear MOLECULE TYPE: protein
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                                                                                                                                                APPLICANT: Stout, John T
APPLICANT: Luu, Hang T
APPLICANT: Maxwell, Douglas
APPLICANT: Ahlquist, Paul
APPLICANT: Hanson, Steve
TITLE OF INVENTION: Transgenic Plants Expressing Geminivirus
TITLE OF INVENTION: Genes
                                                                                                                NUMBER OF SEQUENCES: 6
CORRESPONDENCE ADDRESS:
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MEDIUM TYPE: Floppy disk
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                                                        CITY: Chicago
COUNTRY: U
                                                                         ADDRESSEE: Dressler, Rockey, Milnamow & Katz
STREET: Two Prudential Plaza, Suite 4700
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                  Illinois
7: U.S.A.
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Publication No.
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Best Local Similarity 80.1
Matches 282; Conservative
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INFORMATION FOR SEQ ID NO: 52:
SEQUENCE CHARACTERISTICS:
LENGTH: 353 amino acids
                                                                                                                                                                                                                                                                                GENERAL INFORMATION:
                                                                                                          APPLICANT: Stout, John T
APPLICANT: Lou, Hang T
APPLICANT: Maxwell, Douglas
APPLICANT: Maxwell, Douglas
APPLICANT: Hanson, Steve
TITLE OF INVENTION: Transgenic Plants Expressing Geminivirus
TITLE OF INVENTION: Genes
NUMBER OF SEQUENCES: 63
CORRESPONDENCE ADDRESS:
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TELECOMMUNICATION INFORMATION:
TELEPHONE: 312-616-5400
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CLASSIFICATION: 800
ATTORNEY/AGENT INFORMATION:
NAME: Mueller, Lisa V
REGISTRATION NUMBER: 38,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
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STREET: Two Prudi
CITY: Chicago
STATE: Illinois
COUNTRY: U.S.A.
ZIP: 60601
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                                                                                            ADDRESSEE: Dressler,
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)GY: linear
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                                                                                                                                                                                                                                                                                                 Application US/08838151A
No. US20010011379A1
                                                                           E: Dressler, Rockey, Milnamow & Katz
Two Prudential Plaza, Suite 4700
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Sequence 80, Application US/10633850
Publication No. US20040205843A1
GENERAL INFORMATION:
APPLICANT: Hanley-Bowdoin, Linda
APPLICANT: Orozco, Beverly M.
APPLICANT: Gruissem, Wilhelm
TITLE OF INVENTION: GEMINUTRUS RESISTANT TRANSGENIC PLANTS
FILE REFERENCE: 5051.4581P
CURRENT APPLICATION NUMBER: US/10/633,850
CURRENT FILING DATE: 2003-08-04
PRIOR APPLICATION NUMBER: US 09/289,346
PRIOR APPLICATION NUMBER: US 09/289,346
PRIOR APPLICATION NUMBER: US 09/289,346
PRIOR FILING DATE: 1999-04-09
PRIOR FILING DATE: 1999-04-09
PRIOR FILING DATE: 1999-04-09
PRIOR FILING DATE: 1999-04-09
PRIOR FILING DATE: 1999-03-18
NUMBER OF SEQ ID NOS: 112
SOFTWARE: Patentin version 3.2
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Best Local Similarity
Matches 282; Conserv
SEQ ID NO 80
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: protein
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELECOMMUNICATION INFORMATION: TELEPHONE: 312-616-5400
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MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compati
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER: US/08/838,151A FILING DATE:
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PRIOR APPLICATION NUMBER: US 60/125,004
PRIOR FILING DATE: 1999-03-18
NUMBER OF SEQ ID NOS: 112
SOFTWARE: PatentIn version 3.2
SEQ ID NO 84
LENGTH: 352
TYPE: PRT
ORGANISM: Tomato golden mosaic virus
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Best Local Similarity
Matches 267; Conserv
                                                                                                                                                                                                                                                                Query Match
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CURRENT FILING DATE: 2003-08-04
PRIOR APPLICATION NUMBER: US 09/289,346
PRIOR FILING DATE: 1999-04-09
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TITLE OF INVENTION: GEMINIVIRUS RESISTANT TRANSGENIC PLANTS
FILE REFERENCE: 5051.4581P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Hanley-Bowdoin, Linda APPLICANT: Orozco, Beverly M.
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ORGANISM: Tomato
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                                                                                                                                                                                                                        77.5%; Score 1503.5; DB 17; Length 75.9%; Pred. No. 2.4e-126; tive 45; Mismatches 39; Indels
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RESULT 13
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; ORGANISM: Tomato golden mosaic virus
US-10-633-850-1
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US-10-633-850-1
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CURRENT FILING DATE: 2003-08-04
PRIOR APPLICATION NUMBER: US 09/289,346
PRIOR FILING DATE: 1999-04-09
PRIOR APPLICATION NUMBER: US 60/125,004
PRIOR FILING DATE: 1999-03-18
PRIOR FILING DATE: 1999-03-18
NUMBER OF SEQ ID NOS: 112
SOFTWARE: Patentin version 3.2
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Publication No. US20040205843A1
GENERAL INFORMATION:
APPLICANT: Hanley-Bowdoin, Linda
APPLICANT: Orozoo, Beverly M.
APPLICANT: Gruissem, Wilhelm
TITLE OF INVENTION: GENINIVIRUS RESISTANT TRANSGENIC PLANTS
FILE REFERENCE: 5051.458IP
Sequence 64, Application US/10633850
Publication No. US20040205843A1
GENERAL INFORMATION:
APPLICANT: Hanley-Bowdoin, Linda
APPLICANT: Orozco, Beverly M.
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LENGTH: 352
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Best Local Similarity
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Pred. No. 3e-126;
4; Mismatches 4
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; Sequence 86, Application US/10633850
; Publication No. US20040205843A1
; GENERAL INFORMATION:
APPLICANT: Hanley-Bowdoin, Linda
; APPLICANT: Orozco, Beverly M.
APPLICANT: Gruissem, Wilhelm
TITLE OF INVENTION: GEMINIVIRUS RESISTANT TR
; FILE REFERENCE: 5051.458B; US/10/633,850
; CURRENT APPLICATION UNMBER: US/10/633,850
; CURRENT FILING DATE: 2003-08-04
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FILE REFERENCE: 5051.458IP
CURRENT APPLICATION NUMBER: US/10/633,850
CURRENT FILING DATE: 2003-08-04
PRIOR APPLICATION NUMBER: US 09/289,346
PRIOR APPLICATION NUMBER: US 09/289,346
PRIOR FILING DATE: 1999-04-09
PRIOR PPLICATION NUMBER: US 60/125,004
PRIOR FILING DATE: 1999-03-18
NUMBER OF SEQ ID NOS: 112
                                                                                                                                                                                                                                                             US-10-633-850-86
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Best Local Similarity
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TITLE OF INVENTION: GEMINIVIRUS RESISTANT TRANSGENIC PLANTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TYPE: PRT
ORGANISM: Tomato
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TITLE OF INVENTION: GENERALIZEM
FILE REFERENCE: 5051.4581P
CURRENT APPLICATION NUMBER: US/10/633,850
CURRENT FILING DATE: 2003-08-04
PRIOR APPLICATION NUMBER: US 09/289,346
PRIOR FILING DATE: 1999-04-09
PRIOR FILING DATE: 1999-03-18
PRIOR FILING DATE: 1999-03-18
NUMBER OF SEQ ID NOS: 112
SOFTWARE: Patentin version 3.2
SEQ ID NO 86
LENGTH: 352
TYPE: PRT
CORGANISM: Tomato golden mosaic virus
US-10-633-850-86

Query Match
Best Local Similarity 75.9%; Pred. No. 4.5e-126;
Matches 267; Conservative 44; Mismatches 40; Indels
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APPLICANT: OFOSCO, Beverly M.
APPLICANT: OFOSCO, Wilhelm
TITLE OF INVENTION: GEMINIVIRUS RESISTANT TRANSGENIC PLANTS
FILE REFERENCE: 5051.4581P
CURRENT APPLICATION NUMBER: US/10/633,850
CURRENT FILING DATE: 2003-08-04
PRIOR FILING DATE: 1099-04-09
PRIOR FILING DATE: 1099-04-09
PRIOR FILING DATE: 1999-04-09
PRIOR FILING DATE: 1999-03-18
VINDER OF SEQ ID NUMBER: US 60/125,004
PRIOR FILING DATE: 1999-03-18
VINDER OF SEQ ID NOS: 112
SOFTWARE: Patentin version 3.2
SOFTWARE: Patentin version 3.2
SOFTWARE: Patentin version 3.2
SOFTWARE: OF SEQ ID NOS: 112
ORGANISM: Tomato golden mosaic virus
US-10-633-850-82
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US-10-633-850-82
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                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match 77.3
Best Local Similarity 75.9
Matches 267; Conservative
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                    YLSGHLDFNGRVFSNDVQYNVIDDIAPHYLKLKHWKELLGAQKDWQSNCKYGKPVQIKGG 299
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    Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
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1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:*
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QQCVS1
S49387
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S450356
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304 VLCN		f: 1-358 ferences tion: se ily: tom tch al Simil 358; C 4 PKKF	n - tomato -Feb-199 n: JQ187 no: JQ187 rol. 73, he nucle e number n: JQ187 translat	191.5 188.5 187.5 161.5 102.5 98.5 96.5 96
PGEGASYI	FEGKYQCTNNRI	s <abo> s: UNIPR segment A mato gold llarity Conserval CFRVQSKNYI</abo>	mottle mott! mottle mot	
GEFLDK!	RFFDLVSPT	ROT:Q0665	le virus virus ence_re J.B.; 229, 1: equence 9; MUII shown	153 2 148 2 323 2 323 2 84 2 979 2 1244 2 2116 2 2116 2 2116 2 2116 2 2116 2 2117 2 2421 2 1203 1
HLDENGKVESNDVQINVIDDIAEHILKKKHNAELKAAQKDWQSNCKISKEVQIKGGIE VLCNPGEGASYKEFLDKAENTGLKNWTIKNAIFITLTAPLYQESTQASQETGNQKAQG 	FEGKYQCTINNRFFDLVSPTRSAHFHPNIQGAKSSSDVKSYIDKDGDTIEWGDFQIDGRSA	:L14460 rus AL1 protein e 1920; DB 1; L d. No. 8. 1e-141; ismatches 0; ismatches 0;	late Florida) 17-Feb-1994 #text t, E. mato mottle virus, 858; PMID:1469361	T10115 \$04807 JU0044 JU1552 PS0142 PS0142 IT50956 UKHUT \$73731 A26655 E81269 PWYKL AG2587 G97369 D83764 A47501 F86702 ALIGNMENTS
361	DGDTIEWGDFQIDGRSA 123	Length 358; Indels 0; Gaps 0; IKICRELHENGEPHLHVLVQ 63	_change 09-Jul-2004 a new geminivirus isolated f	replication-associ hypothetical prote hypothetical 15.8K Cl protein - Panic replication-associ hypothetical prote t-plasminogen acti probable lipoprote myosin heavy chain hypothetical prote inorganic diphosph lytic murein trans hypothetical prote chitinase BH0916 [nitric-oxide synth hypothetical prote chitinase H0916 [nitric-oxide synth hypothetical prote

from

RESULT 2
QCCVPT
AL1 protein - potato yellow mosaic virus (isolate Venezuela)
AL1 proteis: potato yellow mosaic virus
C;Species: potato yellow mosaic virus

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C;Date: 30-Jun-1992 #sequence_revision 30-Jun-1992 #text_change 09-Jul-2004
C;Accession: JU0364
A;Gen. Virol. 72, 1515-1520, 1991
A;Reference number: JU0362; MUID:91311403; PMID:1856690
A;Accession: JU0362; MUID:91311403; PMID:1856690
A;Status: translation not shown
A;Residues: 1-361 <COU>
A;Residues: 1-361 <COU>
A;Residues: 1-361 <COU>
A;Cross-references: UNIPROT:P27258; GB:D00940; NID:9222458; PIDN:BAA00782.1; PID:9222459
C;Superfamily: tomato golden mosaic virus AL1 protein
     밁
                                                                                                                                                                                                                                                                                                              AV1 protein - abutilon mosaic virus (isolate West India) C;Species: abutilon mosaic virus (;Date: 31-Mar-1992 #sequence_revision 31-Mar-1992 #text. C;Accession: A36214 R;Frischmuth, T.; Zimmat, G.; Jeske, H. Virology 178, 461-468, 1990 A;Title: The nucleotide sequence of the abutilon mosaic A;Reference number: A36214; MUID:91020984; PMID:2219703 A;Accession: A36214
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C;Genetics:
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A; Residues: 1-355 < FRI>
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Best Local Similarity 77.9
Matches 279; Conservative
                                                                                                                                                            Query Match
Best Local
                                                                                                                                          / Match 80.6%; Score 1562; DB 1; Local Similarity 81.4%; Pred. No. 3.8e-113; ses 293; Conservative 22; Mismatches 35;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 301
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     61
                       61 LVQFEGKYQCTNNRFFDLVSFTRSAHFHFNIQGAKSSSDVKSYIDKDGDTIEWGDFQIDG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   61 LVQFEGKYQCTNNRFFDLVSPTRSAHFHPNIQGAKSSSDVKSYIDKDGDTIEWGDFQIDG
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     LIQFEGKYQCTNNRFFDLVSPTRSAHFHPNIQGAKSSSDVKSYIDKDGDTAEWGEFQIDG
                                                                                            MPPPKKFRVQSKNYFLTYPQCSLSKEEALSQLQNLNTPVNKKFIKICRELHENGEPHLHV
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                                                                        MPPPKKFRVQAKNYFLTYPQCSLTKDEALSQLQNLETPVNKKFIKICRELHENGEPHLHV
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golden mosaic virus AL1 protein
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77.9%;
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Pred. No. 6.5e-114;
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QQCVL1
AL1 pr
C;Spec
AL1 protein - beet curly top virus C;Species: beet curly top virus C;Date: 07-May-1993 #sequence_revision
                                                      RESULT
S28360
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C;Genetics:
A;Map position: segment A
C;Superfamily: tomato gold
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A;Residues: 1-352 <HAM's
A;Cross-references: UNIPROT:P03567
C;Comment: The genome consists of two circular, single-stranded DNA components, DNA A and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Note: host Nicotiana sp. (tobacco)
G;Date: 28-Aug-1985 #sequence_revision 28-Aug-1985 #text_change
C;Accession: A04170
R;Hamilton, W.D.O; Stein, V.E.; Coutts, R.H.A.; Buck, K.W.
EMBO J. 3, 2197-2205, 1984
A;Title: Complete nucleotide sequence of the infectious cloned I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Reference number: A04163
A; Accession: A04170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Li protein - tomato golden mosaic virus ;Species: tomato golden mosaic virus ;Note: host Nicotiana sp. (tobacco)
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                      IPAIVLCNPGEGASYKEFLDKAENTGLKNWTIKNAIFITLTAPLYQESTQAS
                                                                                                        YLSGHLDFNGRVFSNDVQYNVIDDIAPHYLKLKHWKELLGAQKDWQSNCKYGKFVQIKGG
                                                                                                                                                                     WLPPFHVSSFTNVPDEMRQWAENYFGKSSAARPERPISIIIEGDSRTGKTMWARSLGPHN
                                                                                                                                                                                                                                                       GRSARGGCQTSNDAAABALNASSKEEALQIIREKIPEKYLFQFHNLNSNLDRIFDKTPEP
                                                                                                                                                                                                                                                                                             GRSARGGQQSANDSYAKALNAGSVQSALAVLREEQPKDFVLQNHNIRSNLERIFAKAPEP 179
                                                                                                                                                                                                                                                                                                                                       VLIQFEGKYCCQNQRFFDLVSPTRSAHFHPNIQRAKSSSDVKTVIDKDGDTLVWGEFQVD
                                                                                                                                                                                                                                                                                                                                                                                  VLVQFEGKYQCTNNRFFDLVSPTRSAHFHPNIQGAKSSSDVKSYIDKDGDTIEWGDFQID 119
                                                                                                                                                                                                                                                                                                                                                                                                                            MPSHPKRFQINAKNYFLTYPQCSLSKEESLSQLQALNTPINKKFIKICRELHEDGQPHLH
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IPSIVLCNPGEGASYKVFLDKEENTPLKNWTFHNAKFVFLNSPLYQSSTQSS
                                                                                  YLSGHLDLNSRVYSNKVEYNVIDDVTPQYLKLKHWKELIGAQRDWQTNCKYGKPVQIKGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 tomato golden mosaic virus AL1 protein
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75.9%;
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Pred. No. 1.5e-108;
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07-May-1993 #text_change 09-Jul-2004

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Residues: 1-385 <STA>
A;Cross-references: UNIPROT:039485; GB:M24597; EMBL:X04144; NID:g210678; PIDN:AAA42751
C;Superfamily: tomato golden mosaic virus AL1 protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      C;Accession: S28360
R;Stanley, J:, Markham, P.G.; Callis
EMBO J. 5, 1761-1767, 1986
A;Title: The nucleotide sequence of
A;Reference number: S28360
A;Accession: S28360
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A; Residues: 1-362 < DRY>
                                                                                                                                                                                                                                                                                                      A;Title: Nucleotide sequence and genome organization of tomato A;Reference number: JQ1885; MUID:93139778; PMID:8423446 A;Accession: JQ1887
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                                                                                                                                                                                                                                                                                                                                                                                          L1 protein - tomato yellow leaf curl virus
,Alternate names: C1 protein
,Species: tomato yellow leaf curl virus
,Date: 17-Feb-1994 #sequence_revision 17-Fe
                                                                                                                                                                                                                            Cross-references: UNIPROT:P36279; GB:S53251;Superfamily: tomato golden mosaic virus AL1
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Best Local Similarity
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RSARGGOOSANDSYAKALNAGSVOSALAVLREEQPKDFVLQNHNIRSNLERIFAKAPEPW
                                                                                                                            MPPPKKFRVQSKNYFLTYPQCSLSKEEALSQLQNLNTPVNKKFIKICRELHENGEPHLHV
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                                             LIQFEGKFQCKNQRFFDLVSPTRSAHFHPNIQGAKSSSDVKSYLEKDGDTLEWGEFQIDG
                                                                           LVQFEGKYQCTNNRFFDLVSPTRSAHFHPNIQGAKSSSDVKSYIDKDGDTIEWGDFQIDG
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                                                                                                         MTRPKSFRINAKNYFLTYPKCSLTKEEALSQLNNLETPTSKKYIKVCRELHENGEPHLHV
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69.8%;
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                                                                                                                                                                Score 1340.5; DB Pred. No. 5.2e-96; 3; Mismatches 56
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All protein - pepper rizado amarillo virus C; Species: pepper rizado amarillo virus C; Species: pepper rizado amarillo virus C; Date: 22-Nov-193 #sequence_revision 26-May-1 C; Accession: S31875 R; Torres-Pacheco, I; Garzon-Tiznado, J.A.; Jim submitted to the EMBL Data Library, February 19 A; Description: Complete nucleotide sequence of A; Reference number: S31872 A; Accession: S31875 A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          replicase - pepper huasteco virus (component A)

N;Alternate names: ORF AL1 protein

C;Species: pepper huasteco virus

C;Date: 14-Jul-1994 #sequence_revision 14-Jul-1994 #text_change 09-Jul-2004

C;Accession: JQ2300

R;TOrres-Pacheco, I.; Garzon-Tiznado, J.A.; Herrera-Estrella, L.; Rivera-Bustamante, R.
J. Gen. Virol. 74, 225-2231, 1993

A;Title: Complete nuclectide of pepper huasteco virus: Analysis and comparison with big A;Reference number: JQ2299; MUID:94015007; PMID:8409944

A;Reference number: JQ2299; MUID:94015007; PMID:8409944

A;Accession: JQ2300

A;Accession: JQ2300

A;Accession: JQ2300

A;Residues: 1-349 <TOR>
A;Cross-references: UNIPROT:Q06923; GB:X70418; NID:g61023; PIDN:CAA49856.1; PID:g61025

C;Superfamily: tomato golden mosaic virus AL1 protein
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67.9%; Pred. No. 7e-
tive 53; Mismatches
                                                                                                                                  J.A.; Jimenez,
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RESULT 9
$22593
hypothetical protein C4 - tomato yellow leaf curl virus
C;Species: tomato yellow leaf curl virus
C;Species: tomato yellow leaf curl virus
C;Date: 22-Nov-1993 #sequence_revision 10-Nov-1995 #text_change 09-Jul-2004
C;Accession: $22593
R;Kheyr-Pour, A.; Bendahmane, M.; Matzeit, V.; Accotto, G.P.; Crespi, S.; Gronenborn, B.
Nucleic Acids Res. 19, 6763-6769, 1991
A;Title: Tomato yellow leaf curl virus from Sardinia is a whitefly-transmitted monoparti
A;Reference number: $22588; MUID:92107660; PMID:1840676
A;Accession: $22593
A;Status: preliminary; nucleic acid sequence not shown; translation not shown
A;Residues: 1-359 <KHE>
A;Cross-references: UNIPROT:P27260; EMBL:X61153; NID:962211; PIDN:CAA43466:1; PID:962217
A;Note: the nucleotide sequence was submitted to the EMBL Data Library, August 1991
C;Superfamily: tomato golden mosaic virus ALI protein
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A; Residues: 1-349 < TOR>
A; Cross-references: UNIPROT: Q06923;
A; Note: the source is designated as
C; Superfamily: tomato golden mosaic
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                                       VPPFQVSSFTNVPDEMQEW-ADNYFGTGDAAPPDRPVSIIVEGDSRTGKTMWARALGPHN
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                   VSPFLSSSFDQVPDELEHWVSENVMDA--AARPWRPVSIVIEGDSRTGKTTWARSLGPHN
                                                                              RSARGGQQTANDAYAKAINAGSKSQALDVIKELAPRDYVLHFHNINSNLDKVFQVPPAPY
                                                                                                              RSARGGOOSANDSYAKALNAGSVOSALAVLREEOPKDFVLQNHNIRSNLERIFAKAPEPW
                                                                                                                                             LIQFEGKYNCTNQRFFDLVSPTRSAHFHPNIQGAKSSSDVKSYIDKDGDVLEWGTFQIDG
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Pred. No. 7e-9
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RESULT 11
JQ2327
ALI protein - Indian cassava mosaic virus
ALI protein - Indian cassava mosaic virus
N;Alternate names: replication-associated pr
C;Species: Indian cassava mosaic virus
C;Date: 28-Aug-1985 #Bequence revision 07-OC
C;Accession: JQ2327; S35883
R;Hong, Y.G.; Robinson, D.J.; Harrison, B.D.
J. Gen. Virol. 74, 2437-2443, 1993
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R;Hong, Y.; Harrison, B.D.
submitted to the EMBL Data Library,
Nucleotide sequences
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                                                 07-Oct-1994
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A; Description: Nucleotide sequences from tomato leaf curl viru d geminiviruses.
A; Reference number: $58346
A; Accession: $59885
A; Status: preliminary
A; Status: preliminary
A; Modelle type: DNA
A; Residues: 1-360 < HON>
A; Cross-references: UNIPROT:Q88557; EMBL:Z48182; NID:g944838; C; Superfamily: tomato golden mosaic virus AL1 protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 replication-associated protein C1 - tomato yellow 1 C;Species: tomato yellow leaf curl virus C;Species: tomato yellow leaf curl virus C;Date: 14-Jan-1996 #sequence_revision 01-Mar-1996 C;Accession: S59885 R;Hong, Y.; Harrison, B.D.
                                                                                                                                                                                                                                                                                                                                                 RSARGGQQSANDSYAKALNAGSVQSALAVLREEQPKDFVLQNHNIRSNLERIFAKAPEPW
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                               PAIVLCNPGEGASYKEFLDKAENTGLKNWTIKNAIFITLTAPLY----QESTQASQETGN
                                                                           VPPFQVSSFTNVPDEMQEWADNYFGTGDAAPPDRPVSIIVEGDSRTGKTMWARALGPHNY
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         46; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 1310.5;
Pred. No. 1.1
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#text_change

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gene C1 protein - tomato yellow leaf curl virus
C;Species: tomato yellow leaf curl virus
C;Date: 06-Jan-195 #sequence_revision 06-Jan-1995 #text_change 09-Jul-2004
C;Accession: S39211
C;Accession: B39211
R;Noris, E.; Hidalgo, E.; Accotto, G.; Moriones, E.
submitted to the EMBL Data Library, August 1993
A;Description: High similarity among the tomato yellow leaf curl virus isolates from the A;Reference number: S39209
A;Accession: S39211
A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-359 <NOR>
A;Cross-references: UNIPROT:P38609; EMBL:Z25751; NID:g433655; PIDN:CAA81026.1; PID:g4336C;Superfamily: tomato golden mosaic virus AL1 protein
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S39211
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A;Accession: JQ2327
A;Molecule type: DNA
A;Residues: 1-351 <HON>
A;Cross-references: UNIPROT:082676; EMBL:Z24758; NID:g395351; PIDN:CAA80891.1; PID:g5840C;Superfamily: tomato golden mosaic virus AL1 protein
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Best Local S
Matches 240
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Best Local S
Matches 235
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les 235; Conserv
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VPPFQVSSFTNVPDEMQEW-ADNYFGTGDAAPPDRPVSIIVEGDSRTGKTMMARALGPHN
                     VPPFQVSSFTNVPDEMQEW-ADNYFGTGDAAPPDRPVSIIVEGDSRTGKTMWARALGPHN
                                                                                                       RSARGGQQSANDSYAKALNAGSVQSALAVLREEQPKDFVLQNHNIRSNLERIFAKAPEPW
                                                                                                                                                                 LIQFEGKFNCKNNRFFDLVSPTRSAHFHPNIQGAKSSSDVKSYIDKDGDVLEWGTFQIDG
                                                                                                                                                                                         LVQFEGKYQCTNNRFFDLVSPTRSAHFHPNIQGAKSSSDVKSYIDKDGDTIEWGDFQIDG
                                                                                                                                                                                                                                             MAQPKRFQINAKHYFLSFPKCSLSKEEALEQLLQLQTPTNKKYIKICRELHEDGQPHLHM
                                                                                                                                                                                                                                                                                      WPPPKKFRVQSKNYFLTYPQCSLSKEEALSQLQNLNTPVNKKFIKICRELHENGEPHLHV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IPTIFLCNPGPNSSYKEFLDEEKNSALKAWALKNATFISLEGPLYSGTNQGPTQS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 IPAIVLCNPGEGASYKEFLDKAENTGLKNWTIKNAIFITLTAPLYQESTQASQET 354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          YLSGHLDFNGRVFSNDVQYNVIDDIAPHYLKLKHWKELLGAQKDWQSNCKYGKFVQIKGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ENPPPLSSFORVPEELDEWFHENVMG---RARPLRPKSIVIEGDSRTGKTMWSRALGPHN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RSARGGOOSANDAYAAALNSGSKSEALKILRELAPRDYLRDFHHISSNLDRIFTKPPPPY
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VSPFLSSSFDQVPDELEHWVSENVMDA--AARPWRPVSIVIEGDSRTGKTMWARSLGPHN
                                                                               RSARGGOOTANDAYAKAINAGSKSEALDVIKELAPRDYILHFHNINSNLDRVFQVPPAPY
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                                                                                                                                                                                                                                                                                                                               67.3%; Score 1305.5; DB 2; ilarity 67.1%; Pred. No. 2.6e-93; Conservative 52; Mismatches 58;
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ALL protein - tomato yellow leaf curl virus

N;Alternate names: C1 protein
C;Species: tomato yellow leaf curl virus
C;Date: 30-Jun-1992 #sequence_revision 30-Jun-1992 #text_change 09-i
C;Accession: D40779
R;Navot, N.; Pichersky, E.; Zeidan, M.; Zamir, D.; Czosnek, H.
Virology 185, 151-161, 1991
A;Title: Tomato yellow leaf curl virus: a whitefly-transmitted gemir
A;Reference number: A40779; MUID:92024070; PMID:1926771
A;Recession: D40779
A;Status: translation not shown
A;Residues: 1-357 <NAV>
A;Residues: 1-357 <NAV>
A;Residues: 1-357 <NAV>
A;Crossion of the curl virus of the curl vi
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                                                                                                                                                        GHLDFNGRVFSNDVQYNVIDDIAPHYLKLKHWKELLGAQKDWQSNCKYGKPVQIKGGIPA 302
                                                                                                                                                                                                                                                                                         FQVSSFTNVPDEMQEW-ADNYFGTGDAAPPDRPVSIIVEGDSRTGKTMWARALGPHNYLS
                                                                                                                                                                                                                                                                                                                                                                 RGGQQSANDAYAEALNSGSKSEALNILKEKAPKDYILQFHNLSSNLDRIFSPPLEVYVSP
                                                                                                                                                                                                                                                                                                                                                                                                                              RGGQQSANDSYAKALNAGSVQSALAVLREEQPKDFVLQNHNIRSNLERIFAKAPEPWVPP
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                                                                                                                       GHLDLSPKVYSNDAWYNVIDDVDPHY--LKHFKEFMGAQRDWQSNTKYGKPIQIKGGIPT
                                                                                                                                                                                                                                            FLSSSFNQVPDELEEWVAENV--VYSAARPWRPISIVIEGDSRTGKTMWARSLGPHNYLC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IFLCNPGPTSSYRBYLDEEKNISLKNWALKNATFVTLYEPLFASINQGPTQDSQEETNK 356
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RESULT 14
S39235
gene C1 protein - tomato yellow leaf curl virus
c;Species: tomato yellow leaf curl virus
c;Superianity
c;Accession: S39235
A;Ccesspi, S.; Noris, E.; Vaira, A.; Bosco, D.; Accotto, G.
submitted to the EMBL Data Library, December 1993
A;Pescription: A cloned DNA from a TYLCV isolate from Sicily showing low infectivity
A;Reference number: S39233
A;Accession: S39233
A;Accession: S39233
A;Accession: S39233
A;Accession: S39233
A;Accession: S39233
A;Residues: 1-359 <CRE>
A;Cross=references: UNIPROT:088949; EMBL:Z28390; NID:g1041671; PID:g1334964
C;Superfamily: tomato golden mosaic virus AL1 protein
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hypothetical protein, 40.4K - cassava latent virus (Nigerian isolate)
(;Species: cassava latent virus
(;Species: cassava latent virus
(;Accession: $07594
C;Accession: $07594
R;Morris, B.; Coates, L.; Lowe, S.; Richardson, K.; Eddy, P.
Nucleic Acids Res. 18, 197-198, 1990
A;Title: Nucleotide sequence of the infectious cloned DNA components of African cassava
A;Reference number: $07590; MUID:90174930; PMID:2308831
A;Accession: $07594
A;Status: translation not shown
A;Nolecule type: DNA
A;Residues: 1-358 <MOR>
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C;Superfamily: tomato golden mosaic virus AL1 protein
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C;Genetics:
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Best Local Similarity 64.5
Matches 234; Conservative
                                                                                                                                                                                                                                                                                                                          Query Match 66.1%; Score 1282.5; DB 2; Length 358; Best Local Similarity 68.6%; Pred. No. 1.6e-91;
                                                                                                                                                                                                                                                                                                        Matches
                   186 VSSFTNVPDEMQEW-ADNYFGTGDAAPPDRPVSIIVEGDSRTGKTMWARALGPHNYLSGH 244
                                                                             125
                                                                                            126 GQQSANDSYAKALNAGSVQSALAVLREEQPKDFVLQNHNIRSNLERIFAKAPEPWVPDFQ 185
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                                                                                                                                                    GKITITNNRLFDCVHPSCSTNFHPNIQGAKSSSDVKSYLDKDGDTVEWGQFQIDGRSARG
                                                                                                                                                                                       GKYQCTNNRFFDLVSPTRSAHFHPNIQGAKSSSDVKSYIDKDGDTIEWGDFQIDGRSARG 125
                                                                                                                                                                                                                             RFRVQAKNVFLTYPNCSIPKEHLLSFIQTLSLPSNPKFIKICRELHQNGEPHLHALIQFE
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Search completed: December 3, 2004, 15:01:43
Job time : 50 secs

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Minimum DB seq length: 0
Maximum DB seq length: 200000000
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Q67614 tomato mott
Q67614 abutilon mo
Q19613 abutilon mo
Q99174 chino del t
Q77tht9 tomato mott
Q36624 tomato mott
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Q996612 abutilon mo
Q99049 chino del t
P89127 sida yellow
Q8jjv1 tobacco lel
Q67558 bean dwarf
Q71205 potato yell
P89122 sida golden
Q97nv9 sida golden
Q97nv9 sida golden
Q97nv5 sida golden
Q911w5 macroptiliu
Q9qnh bean golden
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Q4139 potato yell
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Result No.

Score

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Database :

Sequence: Title: Perfect score:

Scoring table:

Searched:

Run on:

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PKKFRYQSKONYFLTY	100.0%; llarity 100.0%; Conservative (nmin min TAL TAL TCL	"The nucleotide sequence of tomato mot isolated from tomatoes in Florida."; J. Gen. Virol. 73:3225-3229(1992)i- SIMILARITY: Belongs to the geminive the Swiss Institute of Bioinf the European Bioinformatics Institute. This SWISS-PROT entry is copyright. It between the Swiss Institute of Bioinf the European Bioinformatics Institute. The European Bioinformatics	Name=All; Tomato mottle virus (isolate Florida) Viruses; ssDNA viruses; Geminiviridae; NCBI_TaxID=36449; [1] [1] SEQUENCE FROM N.A. SEQUENCE FROM SEQUENCE FROM N.A. Abouzid A.M., Polston J.E., Hiebert E.	STANDARD; (Rel. 29, Created) (Rel. 29, Last sec (Rel. 44, Last and
MPPPKKFRVQSKNYFLTYPQCSLSKEEALSQLQNLNTPVNKKFIKICRELHENGEPHLHV	Score 1939; DB 1; Length 361 Pred. No. 4.5e-143; D; Mismatches 0; Indels	AL1. AL1_CLV. ATP (By Si.	mottle virus, a new g ininiviruses AL1 protein It is produced throu oinformatics and the ute. There are no re as long as its conten removed. Usage by lent (See http://www.isb.ch).	a) (TMOV). ae; Begomovirus. E.;	PRT; 361 AA. ited) : sequence update) : annotation update)
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Q67614;
01-NOV-1996
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InterPro; IPR001301; Gemini AL1_CLV.
Pfam; PF00799; Gemini AL1; 1.
                                                                                                                                                                    HSSP; P27260; 1L51
GO; GO:0019028; C:viral capsid; IEA.
GO; GO:0005198; F:structural molecule
                                                                                                                                                                                        SEQUENCE FROM N.A. Gilbertson R.L., Hiday: "Infectious DNA clones
                                                                                                                PRINTS; PRO0227; GEMCOATALL.
PRINTS; PRO0228; GEMCOATCLVLI.
PRODOM; PRO00736; Gemini ALL; 1.
SEQUENCE 361 AA; 40547 MW; 3B3B2F75099A293C CRC64;
                                                                                                                                                                                                                                               Gilbertson R.L., Hidayat
                                                                                                                                                                                                                                                                                                                                                           Replicative Name=AL1;
                                                                                                                                                                                                                                                          MEDLINE=93139780;
                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                          Phytopathology 81:1184-1184(1991).
                                                                                                                                                                                                                                                                                                                                 Viruses; ssDNA viruses;
NCBI_TaxID=10835;
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               LVQFEGKYQCTNNRFFDLVSPTRSAHFHPNIQGAKSSSDVKSYIDKDGDTIEWGDFQIDG
                                LVQFEGKYQCTNNRFFDLVSPTRSAHFHPNIQGAKSSSDVKSYIDKDGDTIEWGDFQIDG
                                               MPPKKFRVQSKNYFLTYPQCSLSKEEALSQLQNLNTPVNKKFIKICRELHENGEPHLHV
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(TrEMBLrel. 01, Last sequence update)
(TrEMBLrel. 26, Last annotation update)
                                                                                 Conservative
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Hidayat S.H., Paplomatas E.J.,
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Abouted A.M., Polston J.E., Hiebert E.;
Submitted (FEB-1998) to the EMBL/GenBank/DDBJ databases.
C. -- SIMILIARITY: Belongs to the geminiviruses AL1 protein f;
R EMBL; AF04933 f; AACCIS.2.1; --
R GG; GO:0019028; C: viral capsid; IEA.
GG; GO:005198; F: structural molecule activity; IEA.
R InterPro; IPR001191; Gemini AL1.
R InterPro; IPR001301; Gemini AL1.
R PRINTS; PR00229; GEMCOATCLVL1.
R PGIODOM; PD000736; GEMCOATCLVL1.
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Viruses; ssDNA viruses; (
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Best Local Similarity
Matches 319; Conserv
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-!- SIMILARITY: Belongs to the geminiviruses AL1
EMBL; X15983; CAA34111.2; -
GO; GO:0019028; C:viral capsid; IEA.
GO; GO:0005198; F:structural molecule activity;
InterPro; IPR001301; Gemini AL1.
InterPro; IPR001301; Gemini AL1.
PRINTS; PR00227; GEMCOATAL1.
PRINTS; PR00228; GEMCOATAL1.
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011842;
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    Q9YL74
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Abutilon mosaic virus.
Viruses; ssDNA viruses;
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01-MAR-2004
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CHAIN 333 356 14.4 kDa
SEQUENCE 356 AA; 40247 MW; 3AA732:
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    PRELIMINARY;
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89.6%;
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Pred. No. 2.1e
24; Mismatches
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Best Local Similarity
Matches 316; Conserv
                                                                                  Q7THT9;
Q7THT9;
01-OCT-2003
01-OCT-2003
01-MAR-2004
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01-MAY-1999
01-MAY-1999
01-MAR-2004
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Siduence FROM N.A., Guzman P., Gilbertson R.L.;
"Complete nuclectide sequence of the infectious c
crumple geminivirus.";
(In) Unknown A. (eds.);
ANNUAL MEETING OF THE AMERICAN PHYTOPATHOLOGICAL
PHYTOPATHOLOGY, VOL 88 (SUPPL), pp.44-0, Unknown
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InterPro; IPR001301; Gemini AL1_CLV.
Pfam; PF00799; Gemini AL1; I.
PRINTS; PR00227; GEMCOATAL1.
PRINTS; PR00228; GEMCOATCLVI.
PRODOm; PD000736; Gemini AL1; 1.
SEQUENCE 361 AA; 40826 MW; 7968527DD3A185B1
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Jiang H., Hou Y.-M., Guzman P., Gilbertson R.1

Submitted (OCT-1998) to the EMBL/GenBank/DDBJ

-|- SIMILARITY: Belongs to the geminiviruses /

EMBL; AF101476; AAD17898.1; -.
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GO; GO:0019028; C:viral capsid; IEA.
GO; GO:0005198; F:structural molecule
Tomato mottle Taino virus. Viruses; seDNA viruses; Ge
                                             Name=AC1;
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Viruses; ssDNA viruses;
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Geminiviridae;
    Geminiviridae;
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Pred. No. 3
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Mismatches 17;
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036624;
01-JAN-1998
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GO; GO:0019028; C:viral capsid; IEA.
GO; GO:0005198; F:structural molecule activity; IEA. InterPro; IPR001191; Gemini AL1.
Pfam; PF007799; Gemini AL1; 1.
Plant Dis. 0:0-0(1997).

- SIMILARITY: Belongs to the geminivEMBL; AF012300; AAD09668.1; -
HSSP; P27260; 1L51
GO; GO:0005198; C:viral capsid; IEA.
GO; GO:0005198; F:structural molecule InterPro; IPR001191; Gemini_AL1.
                                                                                                                                                                                                                                                                                                                                                                              Tomato mottle Taino virus.
Viruses; ssDNA viruses; Geminiviridae;
NCBI_TaxID=223358;
                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A. Ramos P.L., Guerra O.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Replication
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-JAN-1998
01-MAR-2004
                                                                                                                                                                                                                                                              Rivera-Bustamante R.;
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Best Local
                                                                              EMBL; AF226664; AAF36703.1; -.
HSSP; P27260; 1L51.
GO; GO:0019028; C:viral capsid; IEA.
GO; GO:005198; F:structural molecule at InterPro; IPR001191; Gemini_AL1.
InterPro; IPR001301; Gemini_AL1_CLV.
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Phytopathology 90:546-552(2000).
-i- SIMILARITY: Belongs to the g
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Pfam; PF00799; Gemini AL1; 1.
PRINTS; PR00227; GEMCOATCLVL1.
PRINTS; PR00228; GEMCOATCLVL1.
ProDom; PD000736; Gemini AL1; 1.
SEQUENCE 361 AA; 40722 MW; 3D43D231F8CC7FB5 CRC64;
                    Pfam; PF00799; Gemini AL1; 1.
PRINTS; PR00227; GEMCOATAL1.
PRINTS; PR00228; GEMCOATCLVL1.
                                                                                                                                                                                                                                                                                                          Brown J.K., Ostrow K.M., Idris A.M., Steng
"Chino del tomate virus: relationships to
identification of A component variants the
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mexico.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Brown J.K., Nelson M.R.; "Transmission, host range, and virus-vector relationships of chino tomate virus, a whitefly-transmitted geminivirus from Sinaloa, Mexico.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Chino del tomate virus-[H8]
Viruses; ssDNA viruses; Gem
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(TrEMBLrel. 15, Last
(TrEMBLrel. 26, Last
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; Pred. No. 4.1e-126;
24; Mismatches 20;
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ps to other begomoviruses
ts that affect symptom
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SS

SEQUENCE

361

AA,

40970 MW; 88.4%;

9A6F3865E1C2B822 CRC64;

Similarity

Score 1715; DB 2; Pred. No. 1.4e-125;

Length

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RESULT 9
Q96612
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Best Local S
Matches 312
                                                 Query Match
Best Local Similarity
Matches 313; Conserv
                                                                                                                                            GO; GO:0019028; C:viral capsid; IEA.
GO; GO:0005198; F:structural molecule ac
InterPro; IPR001191; Gemini_AL1_CLV.
InterPro; IPR001301; Gemini_AL1_CLV.
Pfam; PF00799; Gemini_AL1; I.
PRINTS; PR00227; GEMCOATAL1.
PRINTS; PR00227; GEMCOATCLVL1.
PRODOm; PD000736; Gemini_AL1; 1.
SEQUENCE 361 AA; 40886 MW; 034D5A760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q96612;
Q96612;
O1-FEB-1997
O1-FEB-1997
                                                                                                                                                                                                                                                                                                                                                                         Wu Z.C.Hu.J.S.Polston.J.E., Ullman D.E., Hiebert E.; Submitted (MAR-1996) to the EMBL/GenBank/DDBJ databases.
--- SIMILARITY: Belongs to the geminiviruses AL1 protein EMBL; U51137; AAB18173.1; --
HSSP; P27260; 1L51.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Wu Z.C., Hu J.S., Pollston J.E., Ullman D.E., Hiebert E.; "Complete nuclectide sequence of a non-vector transmissible strain abutilon mosaic geminivirus in Hawaii."; "phytopathology 86:608-613(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Name=AC1
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MPPPKKFRVQSKNYFLTYPQCSLSKEEALSQLQNLNTPVNKKF1K1CRELHENGEPHLHV
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                                                 88.2%; Score 1711; DB 2; ilarity 86.9%; Pred. No. 2.9e-125; Conservative 26; Mismatches 21;
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034D5A7608253CDC CRC64;
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                                                                                                                                                                   Query Match
Best Local Sim:
Matches 310;
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Q9J049;
Q9J049;
01-OCT-2000 (TrEMBLrel. 15, C
01-OCT-2000 (TrEMBLrel. 26, I
01-MAR-2004 (TrEMBLrel. 26, I
Replication initiator protein
                                                                                                                                                                                                                                                                                                                                                               GO; GO:0019028; C:viral capsid; IEA.
GO; GO:005198; F:structural molecule activity;
InterPro; IPR001191; Gemini AL1.
InterPro; IPR001301; Gemini AL1_CLV.
Pfam; PF00799; Gemini AL1; I.
                                                                                                                                                                                                                                                                  PRINTS; PR00227; GEMCŌATALI.
PRINTS; PR00228; GEMCOATCLVII.
Probom; PD000736; Gemini ALI; 1.
SEQUENCE 361 AA; 40928 MW; 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Phytopathology 90:546-552(2000).

-!- SIMILARITY: Belongs to the geminiviruses

EMBL; AF226665; AAF36708.1; -.

HSSP; P27260; 1L51.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Brown J.K., Nelson M.R.; "Transmission, host range, and virus-vector relationships of chino tomate virus, a whitefly-transmitted geminivirus from Sinaloa, Mexico.":
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     expression."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Brown J.K., Ostrow K.M., Idris A.M., Stenger D.C.; "Chino del tomate virus: relationships to other begomovirusidentification of A component variants that affect symptom
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mexico.
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Viruses; ssDNA viruses; Geminiviridae;
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Pred. No. 3.5e-125;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDLINE=98007646; PubMed=9349490; Frischmuth T., Engel M., Lauster S., in a concleotide sequence evidence for the whitefly-transmitted, Sida-infecting k
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sida yellow vein virus. Viruses; ssDNA viruses; NCBI_TaxID=223321;
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Name=AC1;
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01-MAR-2004
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SEQUENCE 361 AA; 40956 MW; DF473608465F29B7 CRC64;
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01-OCT-2002
01-MAR-2004
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-!- SIMILARITY: Belongs to the geminiviruses ALI protein family.
EMBL; AJ488768; CAD32806.1; -.
HSSP; P27260; 1L5I.
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PRINTS; PR00228; GEMCOATCLVLI.
ProDom; PD000736; Gemini ALI; 1.
SEQUENCE 361 AA; 41038 MW; 1
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Tobacco leaf rugose virus.
Viruses; ssDNA viruses; Ge
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                                                                                                                  PAIVLCNPGEGASYKEFLDKAENTGLKNWTIKNAIFITUTAPLYQESTQASQE-TGNQKA
                                                                                                                                                                                                                     LSGHLDFNGRVFSNDVQYNVIDDIAPHYLKLKHWKELLGAQKDWQSNCKYGKPVQIKGGI
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                                                                                                                                                                                          LSGHLDFNARVYSNEVDYNVIDDVAPHYLKLKHWKELLGAQKDWQSNCKYGKPVQIKGGI
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(TrEMBLrel. 26,
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Pred. No. 1.
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Q67558

ID Q67558
AC Q67558;
DT 01-NOV-1996
DT 01-NAR-2004
DE Replicative |
GN Name=ALL;
OS Bean dwarf mu
OC Viruses; 88DD
OX NCBI_TaxID=1
RN [1]
RN [1]
RA Gilberteon R
RA Maxwell D.P.
RT "Cloning of;
RT "Cloning of;
RT particle acc;
Phytopatholo,
RN [2]
RN Hidayat S.H.
RA Ahlquist P.G
RL SEQUENCE FROM
RA Hidayat S.H.
RA Ahlquist P.G
RL SUMILAR!
DR GO:001901
DR GO; GO:001901
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Best Local S
Matches 298
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A Ahlquist P.G., Russell D.R., Maxwell D.P.;
Submitted (MAY-1992) to the EMBL/GenBank/DDBJ databases.

-!- SIMILARITY: Belongs to the geminiviruses AL1 protein far
EMBL, M88179; AAC32402.1; -.

R EMBL, M88179; AAC32402.1; -.

R HSSP, P27260; IL5I.

R GO; GO:0019028; C:viral capsid; IEA.

R GO; GO:0005198; F:structural molecule activity; IEA.

R InterPro; IPR001191; Gemini AL1 CLV.

R Pfam; PF00799; Gemini AL1 L.

R Pfam; PF00799; Gemini AL1 L.
  071205;
071205;
01-AUG-1998
01-AUG-1998
01-MAR-2004
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"Cloning of the complete DNA genomes of four bean-infecting geminiviruses and determining their infectivity by electric particle acceleration.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRINTS; PR00227; GEMCOATALI.
PRINTS; PR00228; GEMCOATCLVL1.
ProDom; PD000736; Gemini ALI; 1.
SEQUENCE 361 AA; 40733 MW; A26939B1EEF923A8 CRC64;
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[1]
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                                                                                                                                                                        PAIVLCNPGEGASYKEFLDKAENTGLKNWTIKNAIFITLTAPLYQESTQASQETGNQK 358
                                                                                                                                                                                                                                                        VPPFPLSSSTNVPDEMQEWADDYFGRGSAARPERPVSLIVEGDSRTGKTMWARALGPHNY
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Pred. No. 1.4e-121;
5; Mismatches 25;
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SEQUENCE.....

STRAIN=PYMY/TT;

Humaharan P., Padidam M., Phelps R.H., Beachy R. 
L Submitted (DEC-1997) to the EMBL/GenBank/DDBJ da 
C -!- SIMILARITY: Belongs to the geminiviruses ALJ 
R EMBL, AF039031; AAC09254.1; -. 

NR HSSP; P27260; 1L51. 
DR GO; GO:0019028; C:viral capsid; IEA. 
GO; GO:0019198; F:structural molecule activity; 
DR InterPro; IPR001191; Gemini ALI. 
DR RINTS; PR00230; Gemini ALI. 
DR PFINTS; PR00227; GEMCOATAL1. 
DR PRINTS; PR00227; GEMCOATCLVL1. 
DR PRINTS; PR00228; GEMCOATCLVL1. 
DR PRINTS; PR00227; GEMCOATCLVL1. 
DR PRINTS; PR00236; Gemini ALI; 1. 

PRODOM; PD000736; GEMINI ALI; 1. 

PRINTS; PR0000736; GEMINI ALI; 1. 

PRODOM; PD000736; GEMINI ALI; 1
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AC P8
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Best Local S
Matches 295
"Nucleotide sequence evidence for the occurrence of three distinct whitefly-transmitted, Sida-infecting bipartite geminiviruses in Central America.";
J. Gen. Virol. 78.227
                                                                                                                                                                                                                                                                                                                                                                                                                                                 P89122;
01-MAY-1997
01-JAN-1998
01-MAR-2004
                                                                                                                                                                                                                                                                                  Sida golden mosaic Honduras virus.
Viruses; ssDNA viruses; Geminiviridae;
NCBI_TaxID=223316;
                                                                                                                                                                                               SEQUENCE FROM N.A. STRAIN=Honduras;
                                                                                                                                                                                                                                                                                                                                                                                                                   AC1 protein.
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Viruses; ssDNA viruses; Geminiviridae; Begomovirus.
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Last annotation update)
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EMBL; Y11097; CAA71973.1; -.

HSSP; P27260; L151.

GO; GO:0019028; C:viral capsid; IEA.

GO; GO:0005198; F:structural molecule activity; IEA.

InterPro; IPR001191; Gemini_AL1.

InterPro; IPR001301; Gemini_AL1.

Pfam; PF00799; Gemini_AL1; I.

PRINTS; PR002207; GEMCOATAL1.

PRINTS; PR002207; GEMCOATCLVL1.

ProDom; PD000736; Gemini_AL1; 1.

PSQUENCE 361 AA; 41137 MW; SBE4C17CE1C7E4DF CRC64;
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                                                   PAIVLCNPGEGASYKEFLDKAENTGLKNWTIKNAIFITLTAPLYQESTQASQETGNQK 358
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